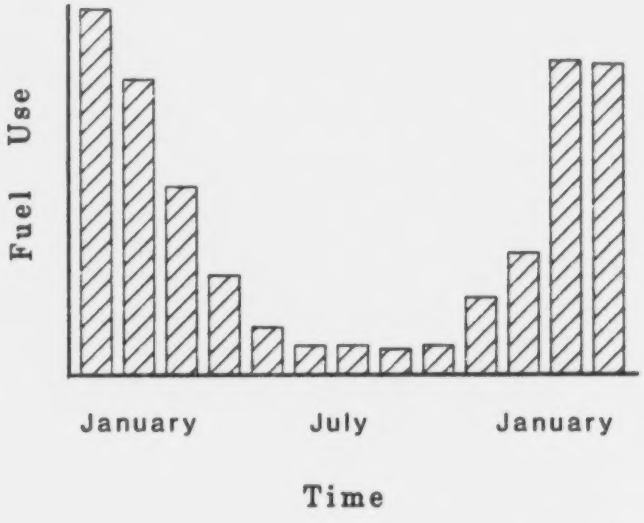
OHIO
SHORT TERM FORECAST
of
Utility Fuels

1986 - 1987



Forecasting and Siting Division

Utilities Department

State of Ohio

Richard F. Celeste

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Public Utilities Commission

Thomas V. Chema

Chairman

Ohio Short Term Energy Forecast of Utility Fuels

1986 - 1987

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EXECUTIVE SUMMARY

Based on one year forecasts submitted by each of the major electric and natural gas utility companies serving Ohio, and based on independent projections of the Division of Forecasting and Siting of the Public Utilities Commission of Ohio, the supplies of fuels for generating electricity and supplies of natural gas for heating and manufacturing are forecast to be adequate through October 1987. The forecast takes into account the possibility of a 10 percent colder than normal winter.

Supplies of coal, used to generate more than 99 percent of the electricity in Ohio, are not expected to fall below a safe margin for any generating utility company through October 1987.

Supplies of the eight major natural gas distribution companies serving the state are expected to be adequate through October 1987.

As in past years, roughly 50 percent of the coal supplied to Ohio electric utilities is from out of state sources. Approximately 75 percent of Ohio's natural gas supply will continue to come from out of state sources.

OHIO SHORT TERM FORECAST
OF UTILITY FUELS
1986 - 1987

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1. INTRODUCTION

The Public Utilities Commission of Ohio, Division of Forecasting and Siting, pursuant to Section 4905.14(E) of the Ohio Revised Code, has the responsibility to provide a summary, an analysis and recommendations based on the Ohio public utilities' energy supply and demand projections for the twelve month period beginning November 1, 1986. The utilities' forecasts and historical data are the primary input for this report. Several other sources of information have also been used, including historical energy data developed by the Division of Forecasting and Siting, federal energy reports and publications from the American Gas Association and the Electric Power Research Institute. A comprehensive data base has been developed to support the Division of Forecasting and Siting's ability to provide timely analyses and forecasts. This report is the technical and forecast summary from these sources.

1.1. Objectives

Major objectives guiding the preparation of this report are:

1. To provide historical data on energy usage, projections of energy availability and projections of consumption for the coming year.
2. To provide an analysis and an interpretation of short-term changes in energy supply and demand.
3. To provide an assessment of the adequacy of natural gas and electric energy supply for the upcoming twelve months.
4. To provide a strategy to prevent or mitigate any interruption or curtailment of service, if a potential deficiency is identified.

1.2. Requirements and Scope of This Report

Utilities are required to file short-term forecast information by Ohio Revised Code, Section 4905.14.

effective July 1, 1978. This information includes the following:

1. The company's projected total demand for the following twelve months.
2. The supply of fuel for the generation of electricity that they will possess as of the first day of November.
3. The quantity of the gas that they possess in storage that will be available for delivery as of the first day of November.

The Division of Forecasting and Siting prepares a summary and analysis of this information which is required under paragraph (E) of Section 4904.14.

The municipal utilities, industrial facilities and the rural electric cooperatives are not required to file this semi-annual report. Accordingly, this report incorporates data from the major electric and gas utilities serving the State. The Division of Forecasting and Siting estimates that in 1986 the major utilities included in this report provided approximately 96 percent of the electricity consumed in the State and 98 percent of

the natural gas, excluding self-help gas.

1.3. Division of Forecasting and Siting Forecasts

As part of its analysis, the Division of Forecasting and Siting makes its own independent forecasts to serve as validation checks. The Division has the capability to forecast monthly demand by utility and for the State as a whole within a reasonable level of error (less than five percent in most cases). Such forecasts are based on an analysis of historical month-by-month actual consumption for both electricity and natural gas and other appropriate variables such as population, income, the business cycle, and temperature data. However, as in any short-term forecast, certain important socioeconomic conditions are assumed in the independent forecasts. These assumptions are:

1. Energy consumption generally follows a seasonal and historical pattern.
2. Long-term socioeconomic changes have a minimal effect on short-term energy consumption.

1.4. Overview of This Report

The report is divided into two parts: electric energy and natural gas. Materials presented in these two parts are, for the most part, parallel in arrangement. They contain:

(a) a profile of reporting utilities;

(b) historical sources of supplies and suppliers;

(c) consumption history by sector, utility and the State;

(d) the utilities' forecasts and independent forecasts by the Division of Forecasting and Siting.

1.5. Energy Consumption and Temperature

Changes in the observed annual energy requirements of the three major consuming sectors (residential, commercial and industrial) may be explained by a variety of factors. Temperature is a variable which explains much of the

observed variation. It is particularly significant in the residential and commercial sectors, during summer and winter periods, when electricity and natural gas are used to maintain comfortable room temperatures.

The two indicators most widely used to measure temperature-sensitive energy requirements are heating degree days and cooling degree days. Degree days are calculated as follows: The daily mean temperature is obtained by adding together the maximum and minimum temperatures reported for the day and dividing the total by two. When the daily mean temperature is 65 degrees Fahrenheit, the degree day total is zero. Each degree of mean temperature below 65 degrees Fahrenheit is counted as one heating degree day. For example, if the maximum temperature was 60 degrees Fahrenheit and the minimum temperature was 50 degrees Fahrenheit for a particular day, then the daily mean temperature would be 55 degrees Fahrenheit {(60+50)/2}. The number of heating degree days would be 10 {65-55}. This is a convenient indicator because the amount of heat required to maintain a certain temperature level is proportional to heating degree days

in winter.

The cooling degree days are defined similarly; Each degree of mean temperature above 65 degree Fahrenheit is counted as one cooling degree day. If the daily mean temperature is 65 degree Fahrenheit or lower, the cooling degree day total is zero. For example, if the maximum temperature was 80 degrees Fahrenheit and the minimum temperature was 70 degrees Fahrenheit for a particular day, then the daily mean temperature would be 75 degrees Fahrenheit {(80+70)/2}. The number of heating degree days would be 10 {75-65}. This is another convenient forecasting indicator because the amount of energy required to maintain a certain temperature level is proportional to cooling degree days in summer.

Since most homes and commercial buildings in Ohio are heated by natural gas, the reporting gas utilities are required to submit supply and demand forecasts under a normal winter scenario and a 10 percent colder than normal winter scenario. In addition, the relationship between natural gas consumption and heating degree days is closely monitored during the winter heating season (from November

through March).

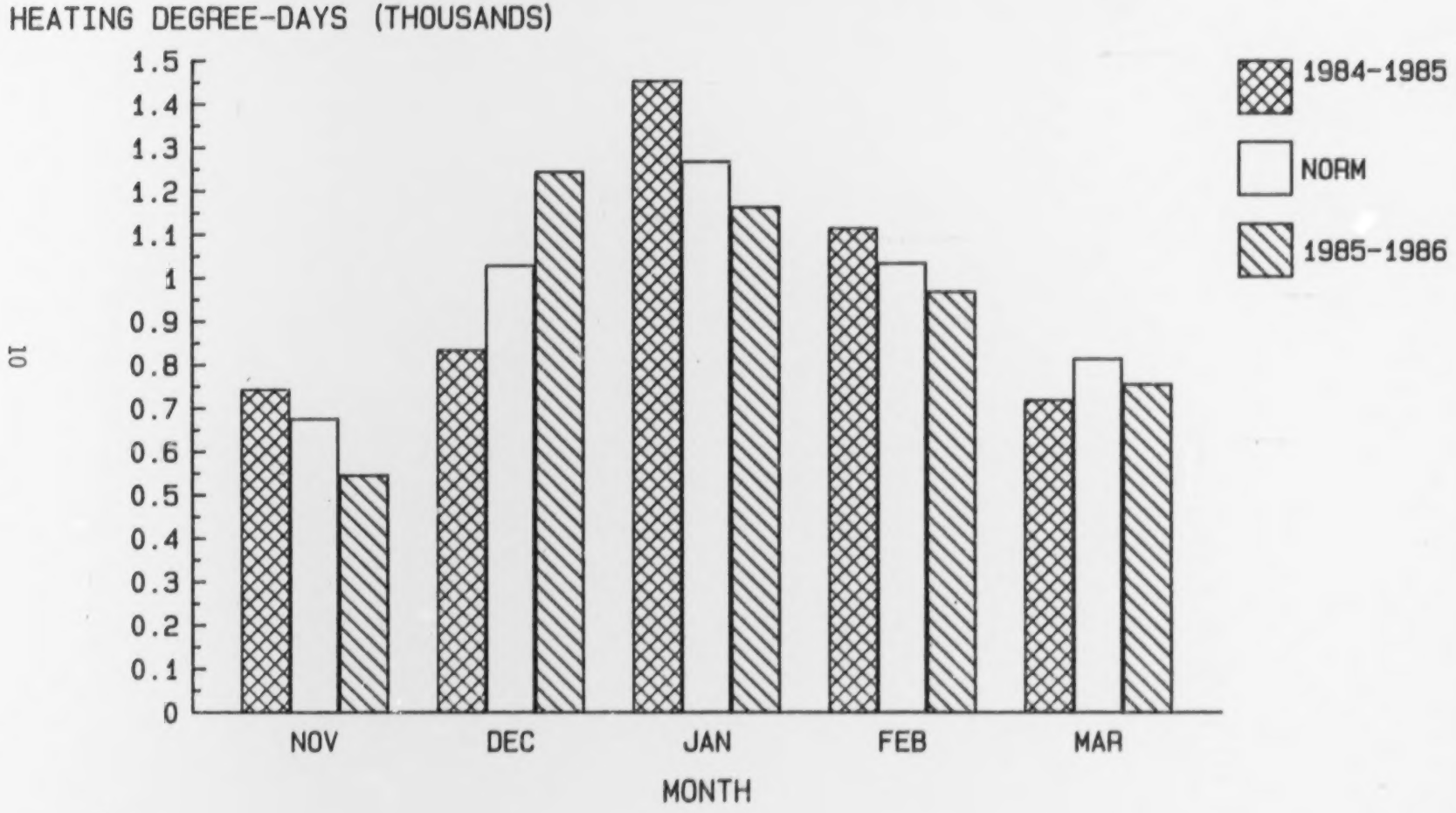
Table 1 and Figure 1 present monthly comparisons of population-weighted state heating degree days for the past two heating seasons. A "normal" heating degree day series, defined as the 16 year average of the years 1970 to 1985 is also included in the comparisons.

TABLE 1. POPULATION-WEIGHTED
HEATING DEGREE-DAY SUMMARY FOR OHIO
NOVEMBER 1984 to MARCH 1986

MONTH	1985-1986	NORM	1984-1985
NOVEMBER	546	675	744
DEVIATION FROM NORM	-19.1%		10.2%
DEVIATION FROM PREVIOUS YEAR	-26.6%		16.6%
DECEMBER	1244	1028	835
DEVIATION FROM NORM	21.0%		-18.8%
DEVIATION FROM PREVIOUS YEAR	49.0%		-34.4%
JANUARY	1163	1267	1454
DEVIATION FROM NORM	-8.2%		14.8%
DEVIATION FROM PREVIOUS YEAR	-20.0%		8.4%
FEBRUARY	968	1033	1115
DEVIATION FROM NORM	-6.3%		7.9%
DEVIATION FROM PREVIOUS YEAR	-13.2%		37.8%
MARCH	755	813	720
DEVIATION FROM NORM	-7.1%		-11.4%
DEVIATION FROM PREVIOUS YEAR	4.9%		-32.2%

SOURCE: National Oceanic and Atmospheric Administration, Historical Climatology Series 5-1 and the Division of Forecasting and Siting.

FIG. 1 POPULATION-WEIGHTED DEGREE DAYS FOR OHIO WINTER HEATING SEASONS (1985 & 1986)



2. ELECTRICITY

This section is based on the November forecasts filed by nine major Ohio electric utilities. Two of these, Columbus and Southern Ohio Electric Company and Ohio Power Company, are subsidiaries of the American Electric Power Company. Because the centrally dispatched American Electric Power operates as a integrated distribution system, the report reviews forecasts of demand and fuel adequacy for the entire American Electric Power Company. The Allegheny Power System is also a centralized power generation and distribution system and is reviewed in the same manner. One subsidiary Monongahela Power, is a Pennsylvania utility whose service area includes a part of southeast Ohio. The forecasts of eight utilities serving Ohio are presented as follows:

1. Allegheny Power System (APS)

   Monongahela Power Company

   Other out-of-state subsidiaries not subject to reporting

2. American Electric Power Company (AEP)

Columbus & Southern Ohio Electric Company (C&SOE)

Ohio Power Company (OP)

Other out-of-state subsidiaries not subject to reporting

3. Cincinnati Gas and Electric Company (CG&E)
4. Cleveland Electric Illuminating Company (CEI)
5. Dayton Power and Light Company (DP&L)
6. Ohio Edison Company (and its subsidiary Pennsylvania Power Company, which is not subject to reporting) (OE)
7. Ohio Valley Electric Corporation (OVEC)
8. Toledo Edison Company (TE)

With the exception of OVEC, each of these is an investor-owned utility supplying electricity to residential, commercial and industrial customers in its service area. The Ohio Valley Electric Corporation is a single-customer utility supplying power for the uranium enrichment plant at Piketon, Ohio. It also sells surplus generation to other electric utilities.

2.1. Supply and Generation

2.1.1. Source/Supplier of Fuel for Electric Generation

Fuels used in Ohio for electric generation include coal, oil, natural gas and nuclear fuel. Nuclear fuel sources are not monitored by the Division. All other fuels are monitored through the utilities' monthly reports. Tables 2 and 3 list coal and oil deliveries to power plants located in Ohio. The main sources of supply and/or suppliers of these fuels remain the same as in the last reporting period.

Coal deliveries to Ohio electric plants during the twelve months ending April 1986 increased by 742,000 tons or 1.66 percent from the previous twelve month period (see Table 2 and Figure 2). Deliveries of oil to Ohio power plants decreased by 150,500 barrels or 25.53 percent during the twelve months ending April 1986 from the previous twelve month period (see Table 3 and Figure 3). The increase in coal deliveries was due to a 11.26 percent rise in generation by coal. The decrease in oil

deliveries was due to a 36.57 percent drop in generation by oil and gas.

2.1.2. Electric Generation by Type of Fuel

Coal remains the main source of fuel for electric generation in Ohio, a condition which is not expected to change in the future. In the twelve month period ending April 1986, 99.37 percent of the total electricity generated in Ohio was from coal, 0.07 percent from gas and oil and 0.56 percent from nuclear generation.

Since July 1985, Davis-Besse and Perry, the two nuclear generation facilities in Ohio, have been essentially offline and have not generated any electricity. Both plants were tentatively scheduled to begin producing electricity in late December 1986 or early January 1987.

Table 4 and Figure 4 show the combined monthly totals of the reporting utilities' net generation from Ohio plants. Historical power plant fuel consumption and fuel stocks are presented in Table 5.

2.2. Historical Behavior of Sectoral Requirements

Electricity consumption by the residential and commercial sectors exhibits regular seasonal patterns while the industrial sector fluctuates widely with general economic conditions (see Appendix A).

Residential sectoral consumption rose 5.1 percent for the twelve month period ending in August 1986 in contrast to a 3.1 percent decrease last year (see Table 6 and Figure 5-A). The increase in the 1985-1986 period was mainly due to the warmer than normal summer months of June, July and August which resulted in a 12 percent increase in sales for those three months.

Commercial sectoral consumption increased 5.7 percent for the year ending in August 1986 (see Table 6 and Figure 5-B). Historically, July and August represent the two months in which commercial sales are usually at their highest for the year. The warmer than normal summer months were a major factor in the rise of sales in the commercial sector. There was a 9 percent increase in consumption in 1986 versus 1985 for the three summer

months of June, July and August.

Industrial sales are highly sensitive to the business cycle. They reached their peak in 1977. With the onset of the 1979-1985 recession-recovery cycle, sales have fluctuated below that peak in response to the trials and tribulations of traditional heavy manufacturing industries in Ohio. With the leveling off of the current recovery phase in 1986, industrial sales dropped 1.9 percent for the year ending August 1986 (see Table 6 and Figure 5-C).

Total electricity consumption in the State for the 1985-1986 forecast year was 2.1 percent higher than during the previous year (see Table 6 and Figures 5-D & 5-E). Although there were substantially higher gains in both the residential and commercial sectors, there were only moderate gains for the State as a whole. The industrial sector, which posted a 1.9 percent drop in sales, comprises over 43 percent of the Ohio electric market. The residential and commercial sectors retain 29 percent and 23 percent of the market respectively. (Note that the remaining 5 percent went to sales to municipal utilities, state and federal government).

2.3. Twelve Month Electricity Demand Forecasts

Each electric utility is required by the revised Ohio code, section 4905.14(D), to submit forecasts at the beginning of July and November to the Public Utilities Commission of Ohio, Division of Forecasting and Siting (formerly the Division of Energy, Department of Development). The forecasts are required to project the total demand of each company's service area for the following twelve months. These forecasts are displayed in Appendix A, Tables A-1 through A-8, along with independent forecasts prepared by the Division of Forecasting and Siting. The Division also prepares independent twelve month forecasts of electricity demand for the State of Ohio, by sector. These forecasts are displayed in Appendix A, Tables A-9 through A-12.

2.4. Assessment of Utility Fuel Adequacy

Tables 7-A and 7-B present the utilities' projections

of deliveries, consumption, and end-of-month stocks of coal and oil for the generation of electricity. Table 7-C presents the Division's independent assessment of the adequacy of supply of generating fuels. The Division's projections and assessments are presented for the CAPCO Group of utilities, which include Cleveland Electric Illuminating, Ohio Edison, and Toledo Edison; for the American Electric Power and Allegheny Power Systems, and for Dayton Power and Light, Cincinnati Gas and Electric, and the Ohio Valley Electric Corporation.

2.4.1. Coal

The Division's projections, as well as those of the electric utilities, indicate an adequate supply of coal throughout the forecast period for each utility serving the State. The Ohio Edison System possessed the highest average monthly inventory of coal with a little over 3 months of supplies while Dayton Power and Light retained the lowest average monthly inventory with about 2 months of coal supplies in stock. The average monthly inventory for the eight companies under consideration was 74 days.

2.4.2. Oil

Each electric utility forecasts an adequate supply of oil for the generation of electricity throughout the forecast period. The decline in oil usage in Ohio has resulted in net generation from oil of less than 0.5 percent of total net generation. Currently, oil is being used as a start-up fuel and in peaking units. Due to the current high reserve margins for all utilities, the Division does not anticipate that the utilities will generate much electricity from peaking units and consequently our projections indicate that there will be an adequate supply of oil, under normal generating conditions.

TABLE 2. SOURCE OF COAL SUPPLY TO ELECTRIC UTILITIES
OHIO PORTION
1000 Short Tons

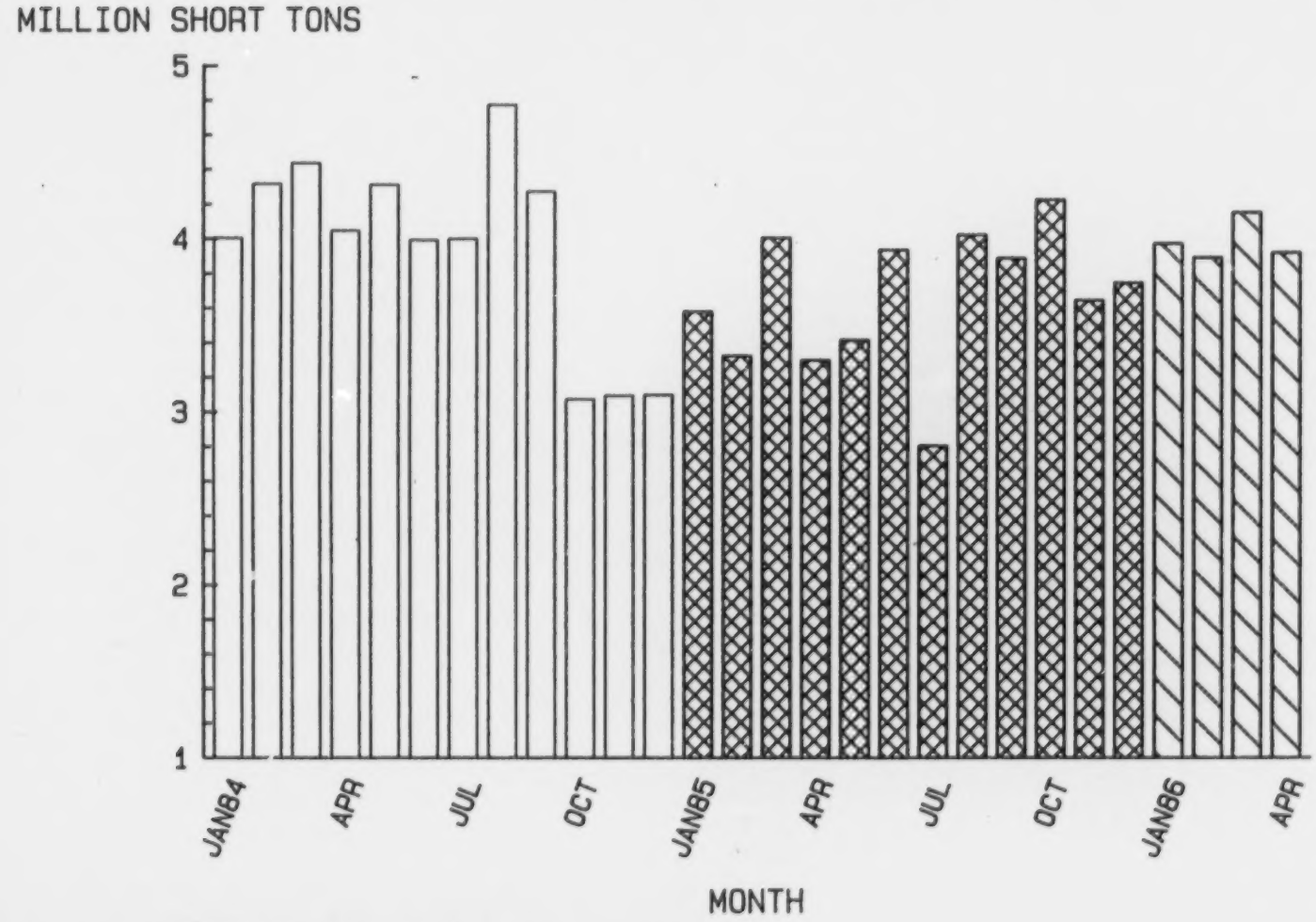
Month	1	2	3	4	6	7&8	9	Other	Total
1984									
January	0.0	196.9	36.0	2,144.9	310.4	1,272.5	46.1	0.0	4,006.8
February	0.0	211.7	42.4	2,337.8	384.1	1,302.1	40.2	0.0	4,318.3
March	0.0	258.9	62.5	2,499.4	387.1	1,170.7	59.1	0.0	4,437.7
April	0.0	206.8	44.3	2,248.9	466.3	1,064.3	16.4	0.0	4,047.0
May	0.0	194.5	19.2	2,451.0	374.9	1,273.0	0.0	0.0	4,312.6
June	0.0	176.2	28.1	2,173.4	382.0	1,217.1	15.2	0.0	3,992.0
July	0.0	185.7	33.1	2,360.1	170.2	1,229.6	19.8	0.0	3,998.5
August	0.0	190.9	27.5	2,523.7	493.2	1,537.4	0.0	0.0	4,772.7
September	0.0	132.5	8.3	2,225.7	423.3	1,471.8	10.6	0.0	4,272.2
October	0.0	117.0	3.6	1,733.2	317.8	880.2	22.0	0.0	3,073.8
November	0.0	128.4	12.6	1,730.7	270.2	943.4	6.2	0.0	3,091.5
December	0.0	144.8	23.6	1,558.1	283.8	1,065.8	19.5	0.0	3,095.6
Total	0.0	2,144.3	341.2	25,986.9	4,263.3	14,427.9	255.1	0.0	47,418.7
% of Total	0.0	4.5	0.7	54.8	9.0	30.4	0.5	0.0	100.0
1985									
January	0.0	166.8	29.1	1,962.9	363.6	1,027.5	24.5	0.0	3,574.4
February	0.0	215.3	53.4	1,756.1	467.0	807.4	20.8	0.0	3,320.0
March	0.0	199.4	51.2	1,921.9	492.7	1,301.9	32.8	0.0	3,999.9
April	0.0	180.5	51.2	1,631.7	426.7	973.0	31.9	0.0	3,295.0
May	0.0	196.8	49.3	1,790.2	305.0	1,051.8	17.4	0.0	3,410.5
June	0.0	250.3	31.4	2,196.9	269.7	1,181.0	0.0	0.0	3,929.3
July	0.0	201.2	65.6	1,529.7	97.3	857.0	28.8	0.0	2,779.6
August	0.0	258.5	78.9	2,175.7	354.6	1,148.3	0.0	0.0	4,016.0
September	0.0	242.4	42.9	2,087.6	331.3	1,161.1	16.6	0.0	3,881.9
October	0.0	306.5	45.5	2,254.4	353.2	1,219.8	40.2	0.0	4,219.6
November	0.0	177.6	38.3	1,933.3	342.3	1,148.1	0.0	0.0	3,639.6
December	0.0	160.8	25.2	2,098.8	316.7	1,113.0	25.5	0.0	3,740.0
Total	0.0	2,556.1	562.0	23,339.2	4,120.1	12,989.9	238.5	0.0	43,805.8
% of Total	0.0	5.8	1.3	53.3	9.4	29.7	0.5	0.0	100.0
1986									
January	0.0	139.0	23.2	2,355.5	306.6	1,110.7	34.1	0.0	3,969.1
February	0.0	260.1	32.5	2,025.3	325.9	1,194.3	51.3	0.0	3,889.4
March	0.0	273.6	30.6	2,076.8	327.9	1,411.8	28.0	0.0	4,148.7
April	0.0	304.0	44.6	2,088.6	169.0	1,246.9	63.4	0.0	3,916.5

District
1. Eastern Pennsylvania
2. Western Pennsylvania
3. Ohio
4. Pandhandle (in West Virginia)
5. Southern No. 1 (in West Virginia and Virginia)
6. Southern No. 2 (in West Virginia and Virginia)
7. Western Kentucky

Other- Primarily from Wyoming and Utah

Source: Form FPC 423

FIG. 2 MONTHLY COAL DELIVERIES TO POWER PLANTS IN OHIO (JANUARY 1984 - APRIL 1986)



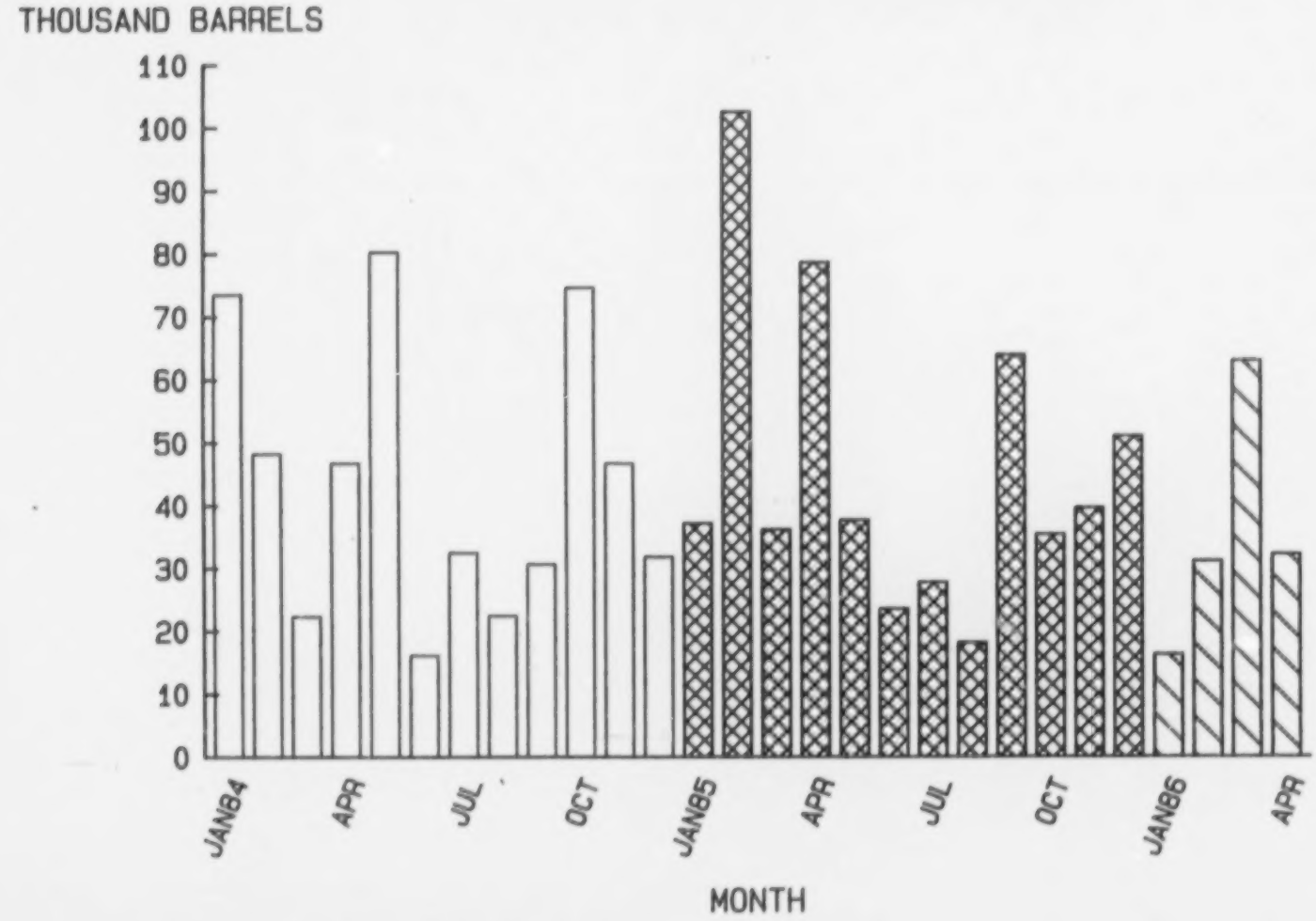
SOURCE: THE DIVISION OF FORECASTING & SITING.

Table 3. Major Oil Suppliers to Electric Utilities
Ohio Portion
(Thousand Barrels)

1984	Allied	Marathon	Standard	Union	Other	Total
January	66.0	0.2	2.4	3.0	2.0	73.6
February	38.9	0.4	2.8	1.0	5.2	48.3
March	12.8	0.4	4.5	2.0	2.7	22.4
April	40.6	3.3	0.0	0.0	2.9	46.8
May	70.6	0.6	4.5	1.0	3.6	80.3
June	11.6	0.6	3.4	0.0	0.6	16.2
July	21.5	0.2	6.7	1.0	3.1	32.5
August	12.5	0.6	4.4	0.0	5.0	22.5
September	14.9	0.2	15.6	0.0	0.0	30.7
October	45.0	0.0	29.6	0.0	0.0	74.6
November	40.0	0.0	6.7	0.0	0.0	46.7
December	26.7	0.0	5.1	0.0	0.0	31.8
Total	401.1	6.5	85.7	8.0	25.1	526.4
% of Total	76.2	1.2	16.3	1.5	4.8	100.0
1985						
January	15.2	0.0	5.1	0.0	16.8	37.1
February	96.2	0.2	6.0	0.0	0.0	102.4
March	20.1	0.2	5.4	0.0	10.4	36.1
April	65.3	0.0	13.2	0.0	0.0	78.5
May	36.9	0.2	0.5	0.0	0.0	37.6
June	18.0	0.4	5.1	0.0	0.0	23.5
July	9.9	0.4	17.4	0.0	0.0	27.7
August	14.7	0.0	3.4	0.0	0.0	18.1
September	45.1	0.2	16.4	0.0	2.1	63.8
October	31.7	0.0	2.4	0.0	1.2	35.3
November	37.1	0.0	2.4	0.0	0.0	39.5
December	39.0	0.0	7.9	0.0	4.0	50.9
Total	429.2	1.6	85.2	0.0	34.5	550.5
% of Total	78.0	0.3	15.5	0.0	6.3	100.0
1986						
January	8.1	0.2	4.4	0.0	3.6	16.3
February	19.1	0.0	3.1	0.0	8.9	31.1
March	39.6	0.0	16.8	0.0	6.5	62.9
April	24.3	0.0	0.0	0.0	7.9	32.2

Source: Form FPC 423 and PUCO, Division of Forecasting and Siting.

FIG. 3 MONTHLY OIL DELIVERIES TO POWER PLANTS IN OHIO (JANUARY 1984 - APRIL 1986)



SOURCE: THE DIVISION OF FORECASTING & SITING.

Table 4. Major Ohio Utilities - Net Generation
by Types of Fuel (Ohio Portion)
(Thousand MWH)

	Coal	Oil	Gas	Nuclear	Total
1984					
January	10503	9	4	249	10765
February	8608	2	0	596	9206
March	9344	4	2	111	9461
April	6847	4	1	579	7431
May	7771	3	1	546	8321
June	8632	6	1	556	9195
July	8316	16	1	586	8919
August	9122	6	1	569	9698
September	7771	3	1	152	7927
October	8690	3	1	0	8694
November	8196	15	1	0	8212
December	8344	7	1	0	8352
Total	102144	78	15	3944	106181
% of Total	96.20	0.07	0.01	3.71	100.00
1985					
January	10407	25	1	129	10562
February	8856	20	0	543	9419
March	8472	6	1	358	8837
April	8717	4	1	254	8976
May	9010	7	2	577	9596
June	9226	4	1	81	9312
July	9847	6	1	0	9854
August	10019	8	2	0	10029
September	9458	11	1	0	9470
October	9169	2	0	0	9171
November	8844	4	1	0	8849
December	10346	8	1	0	10355
Total	112371	105	12	1942	114430
% of Total	98.20	0.09	0.01	1.70	100.00
1986					
January	10183	6	1	0	10190
February	10015	6	0	0	10021
March	10108	3	0	0	10111
April	9063	3	0	0	9066

Source: Form FPC 423 and PUCO, Division of Forecasting and Siting.

FIG. 4 NET GENERATION BY TYPE OF FUEL

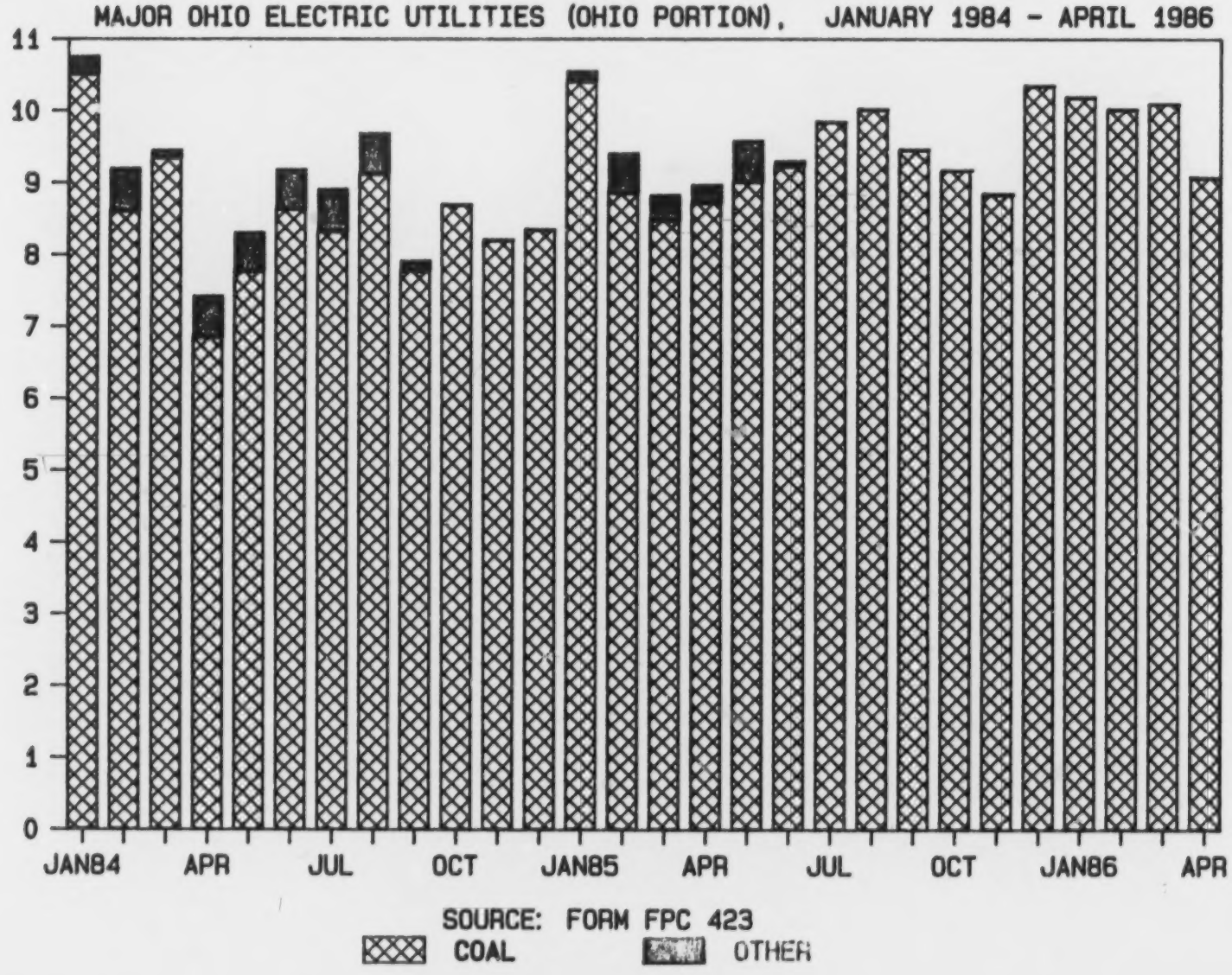


Table 5. Major Ohio Utilities
Fuel Consumption and Stocks
(Ohio Portion)

	Coal (Thousand Tons)		Oil (Thousand 42-Gal. Bbls.)		Gas (MMCF)
1984	Burned	In Stock	Burned	In Stock	Burned
January	4,635.1	6,913.0	58.3	396.7	76.0
February	3,756.3	7,364.0	54.3	390.5	14.0
March	4,113.5	7,793.7	16.6	397.7	56.1
April	2,977.2	8,445.0	34.8	388.6	44.7
May	3,362.8	9,761.1	44.3	449.5	35.3
June	3,726.9	10,164.8	42.9	450.7	53.2
July	3,667.3	10,541.4	42.0	441.3	37.8
August	3,951.9	11,400.6	47.0	418.7	14.8
September	3,273.7	12,393.2	36.9	410.6	18.7
October	3,733.3	11,725.0	43.9	442.4	21.5
November	3,120.7	11,379.0	71.3	738.3	179.5
December	3,808.6	12,410.2	45.5	409.9	21.0
Total	44,127.3	120,291.0	537.8	5,334.9	572.6
Avg/Month	3,677.3	10,024.3	44.8	444.6	47.7
1985					
January	4,477.9	11,664.1	128.3	384.2	47.0
February	3,842.9	11,465.0	87.5	378.5	23.9
March	3,687.3	12,135.7	63.2	385.0	29.7
April	3,846.4	12,140.9	36.1	424.1	34.9
May	3,921.8	11,986.6	45.0	417.6	55.5
June	4,093.2	12,321.5	33.5	418.0	28.0
July	4,321.7	11,159.2	53.3	393.9	28.7
August	4,461.3	10,881.9	46.2	375.5	48.1
September	4,170.3	10,734.0	62.7	390.1	42.3
October	4,043.4	11,088.1	37.2	416.0	11.4
November	3,941.5	11,161.3	54.2	403.4	32.3
December	4,550.1	10,498.8	61.8	410.6	47.8
Total	49,357.8	137,237.1	709.0	4,796.8	429.6
Avg/Month	4,113.2	11,436.4	59.1	399.7	35.8
1986					
January	4,461.2	10,075.2	56.9	400.1	26.5
February	4,419.4	9,667.1	46.9	390.6	24.1
March	4,432.8	9,329.7	42.3	409.9	46.7
April	4,052.1	9,863.2	36.9	414.7	4.8

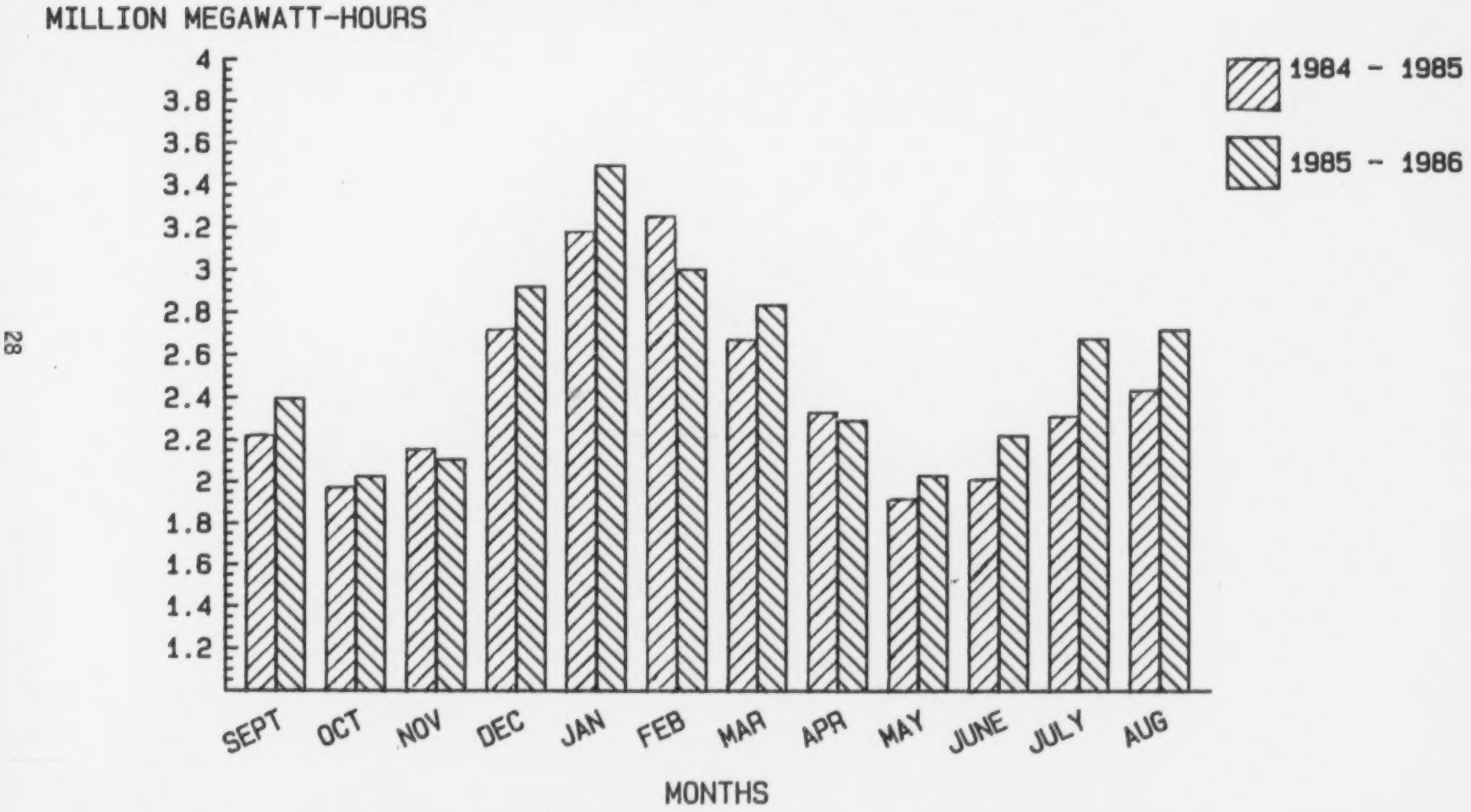
Source: Form FPC 423 and PUCO, Division of Forecasting and Siting

Table 6. Ohio Electricity Consumption
September 1984 - August 1986
(Thousand MWH)

	September	October	November	December	January	February	March	April	May	June	July	August	Total
Residential													
1985-86	2397	2026	2111	2916	3485	2999	2825	2288	2032	2220	2670	2707	30676
1984-85	2230	1976	2160	2715	3179	3250	2674	2329	1923	2005	2306	2430	29177
% Change	7	3	-2	7	10	-8	6	-2	6	11	16	11	5
Commercial													
1985-86	2128	1849	1798	2014	2140	2025	2003	1840	1902	2107	2261	2306	24373
1984-85	1945	1776	1777	1852	2019	2027	1885	1819	1839	1910	2053	2156	23058
% Change	9	4	1	9	6	-0	6	1	3	10	10	7	6
Industrial													
1985-86	3775	3767	3707	3682	3770	3824	3901	3828	3800	3808	3530	3611	45003
1984-85	3860	3892	3776	3603	3794	3860	3930	3891	3925	3807	3732	3780	45850
% Change	-2	-3	-2	2	-1	-1	-1	-2	-3	0	-5	-4	-2
Other													
1985-86	436	416	426	479	474	459	436	422	398	423	456	433	5258
1984-85	379	401	411	464	476	478	442	384	391	412	403	417	5058
% Change	15	4	4	3	-0	-4	-1	10	2	3	13	4	4
Total													
1985-86	8736	8058	8042	9091	9869	9307	9165	8378	8132	8558	8917	9057	105310
1984-85	8414	8045	8124	8634	9468	9615	8931	8423	8078	8134	8494	8783	103143
% Change	4	0	-1	5	4	-3	3	-1	1	5	5	3	2

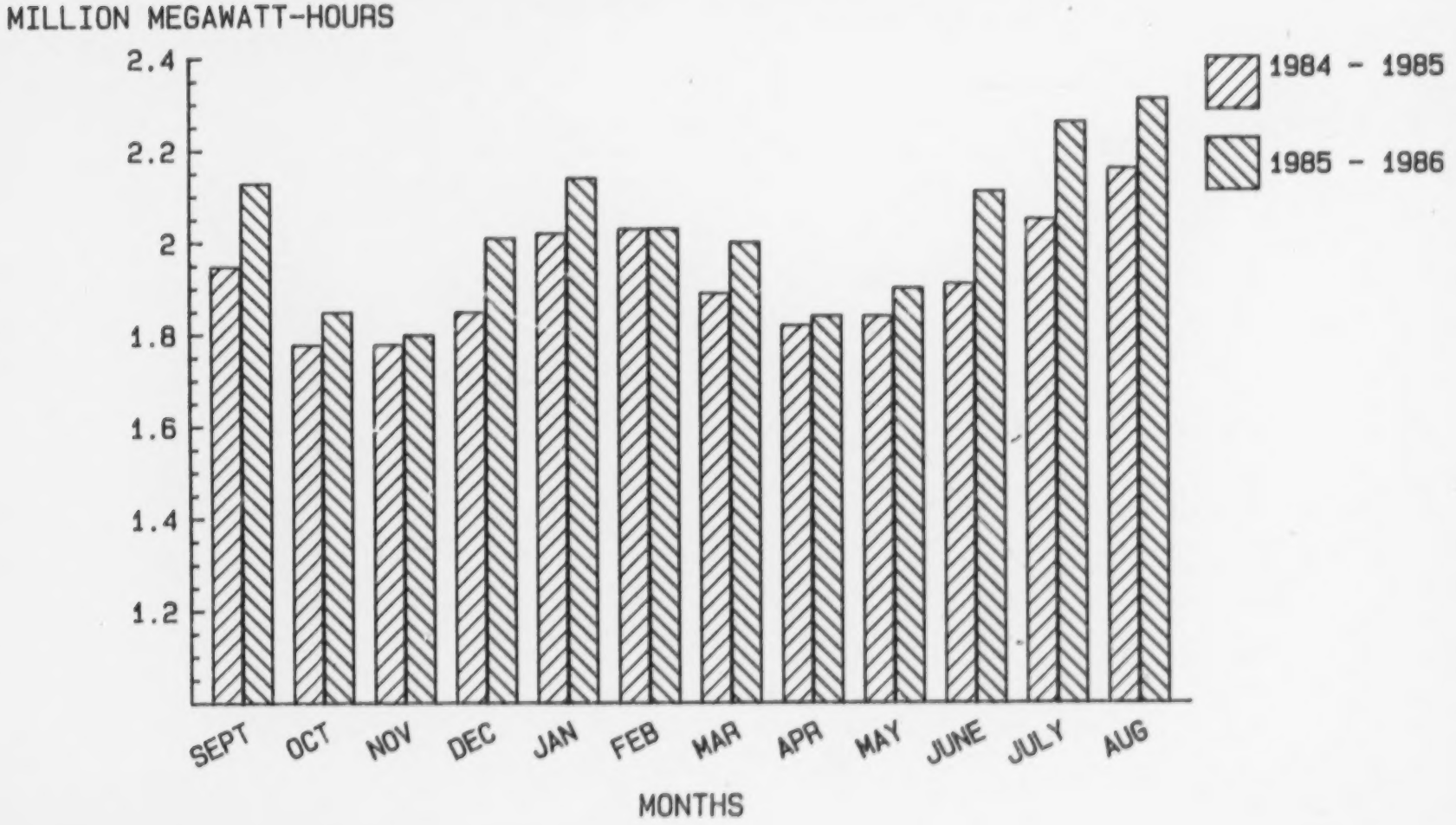
Source: The Ohio Electric Utility Institute: Monthly Summaries

FIG. 5-A. OHIO RESIDENTIAL ELECTRIC CONSUMPTION CONSUMPTION: 1984 - 1985 VS. 1985 - 1986



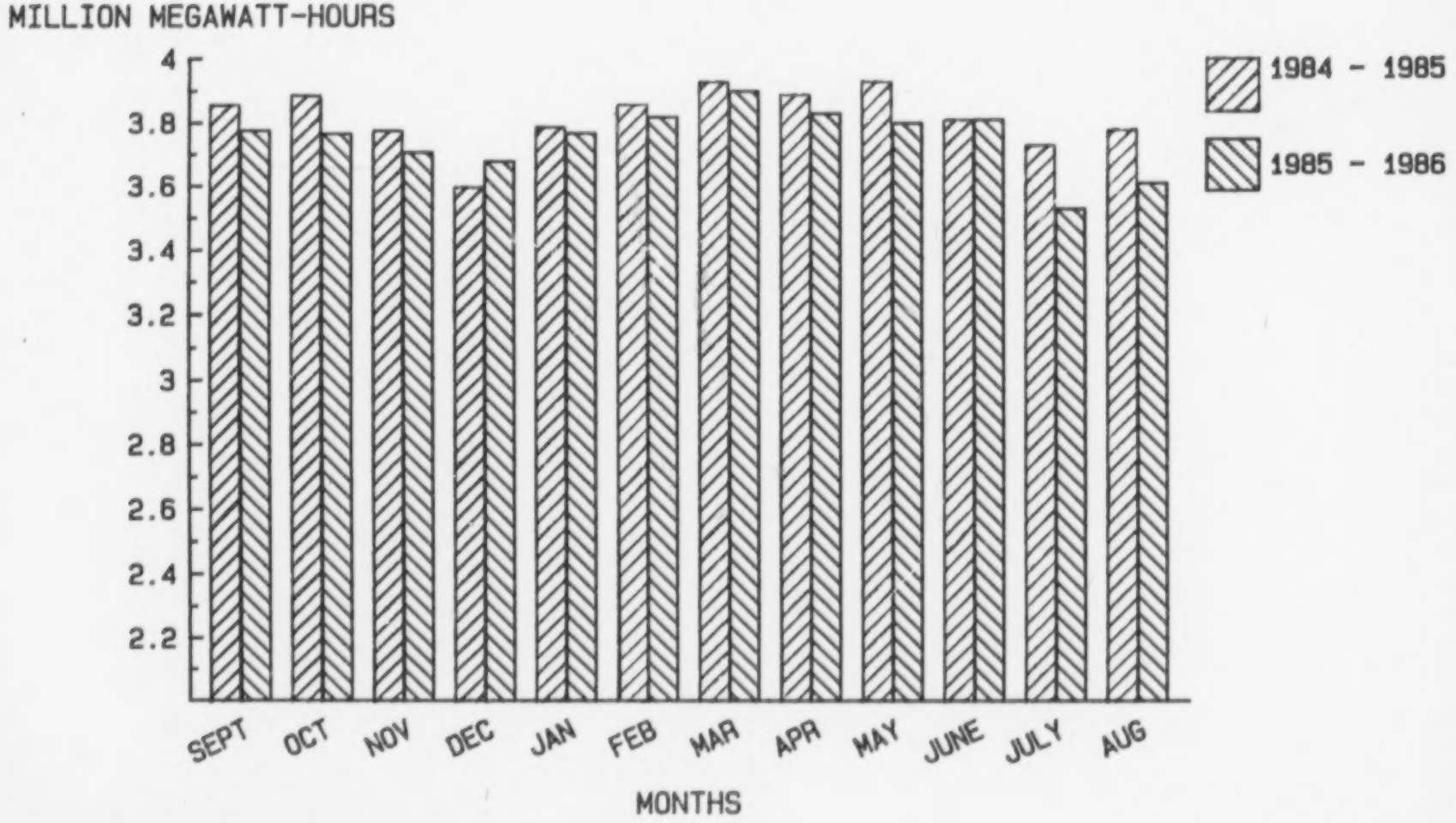
Source: The Ohio Electric Utility Institute.

FIG. 5-B. OHIO COMMERCIAL ELECTRIC CONSUMPTION CONSUMPTION: 1984 - 1985 VS. 1985 - 1986



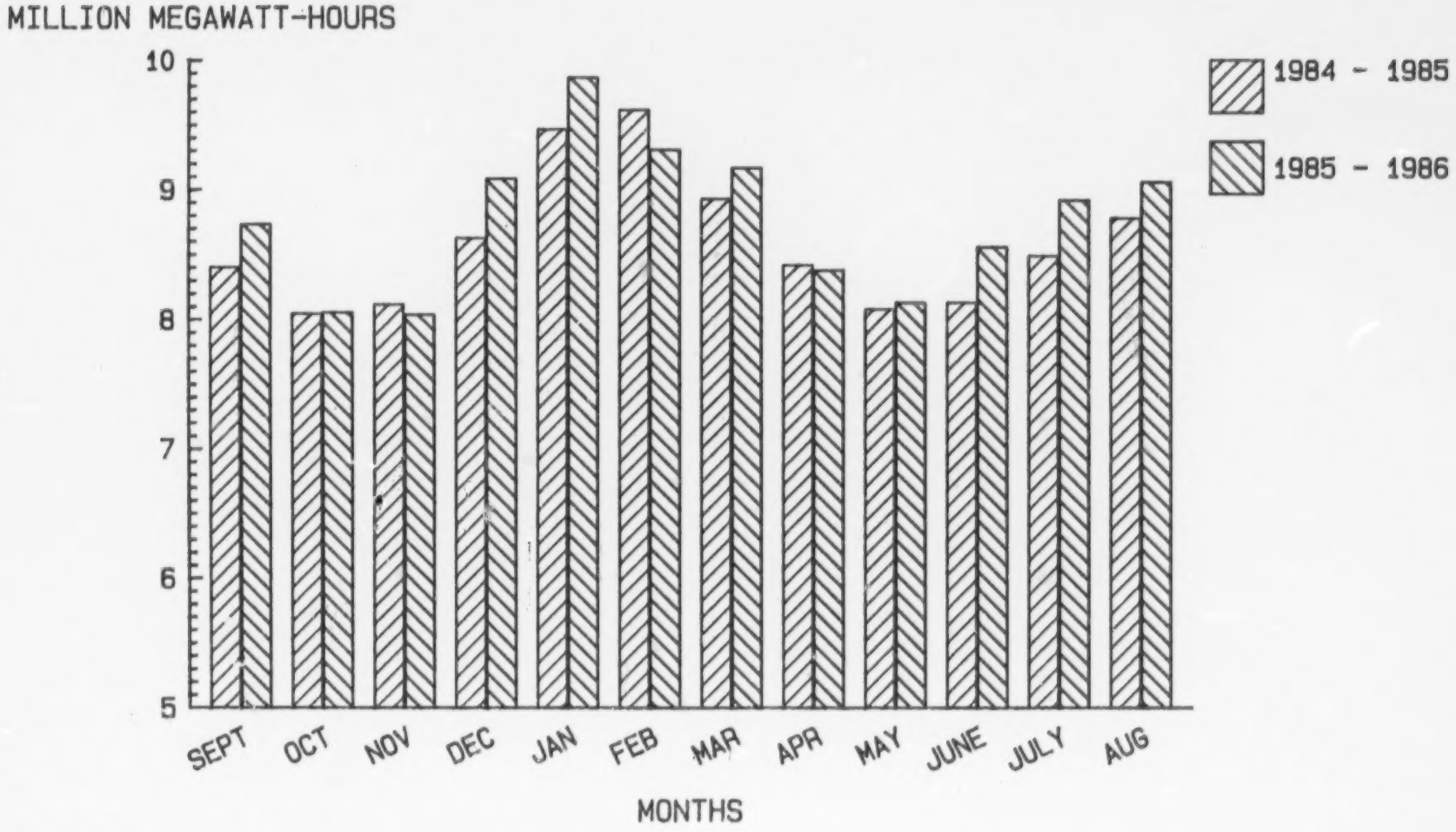
Source: The Ohio Electric Utility Institute.

FIG. 5-C. OHIO INDUSTRIAL ELECTRIC CONSUMPTION CONSUMPTION: 1984 - 1985 VS. 1985 - 1986



Source: The Ohio Electric Utility Institute.

FIG. 5-D. OHIO TOTAL ELECTRIC CONSUMPTION CONSUMPTION: 1984 - 1985 VS. 1985 - 1986



Source: The Ohio Electric Utility Institute.

FIG 5E. MONTHLY ELECTRICITY CONSUMPTION

(JANUARY 1975 - AUGUST 1986)

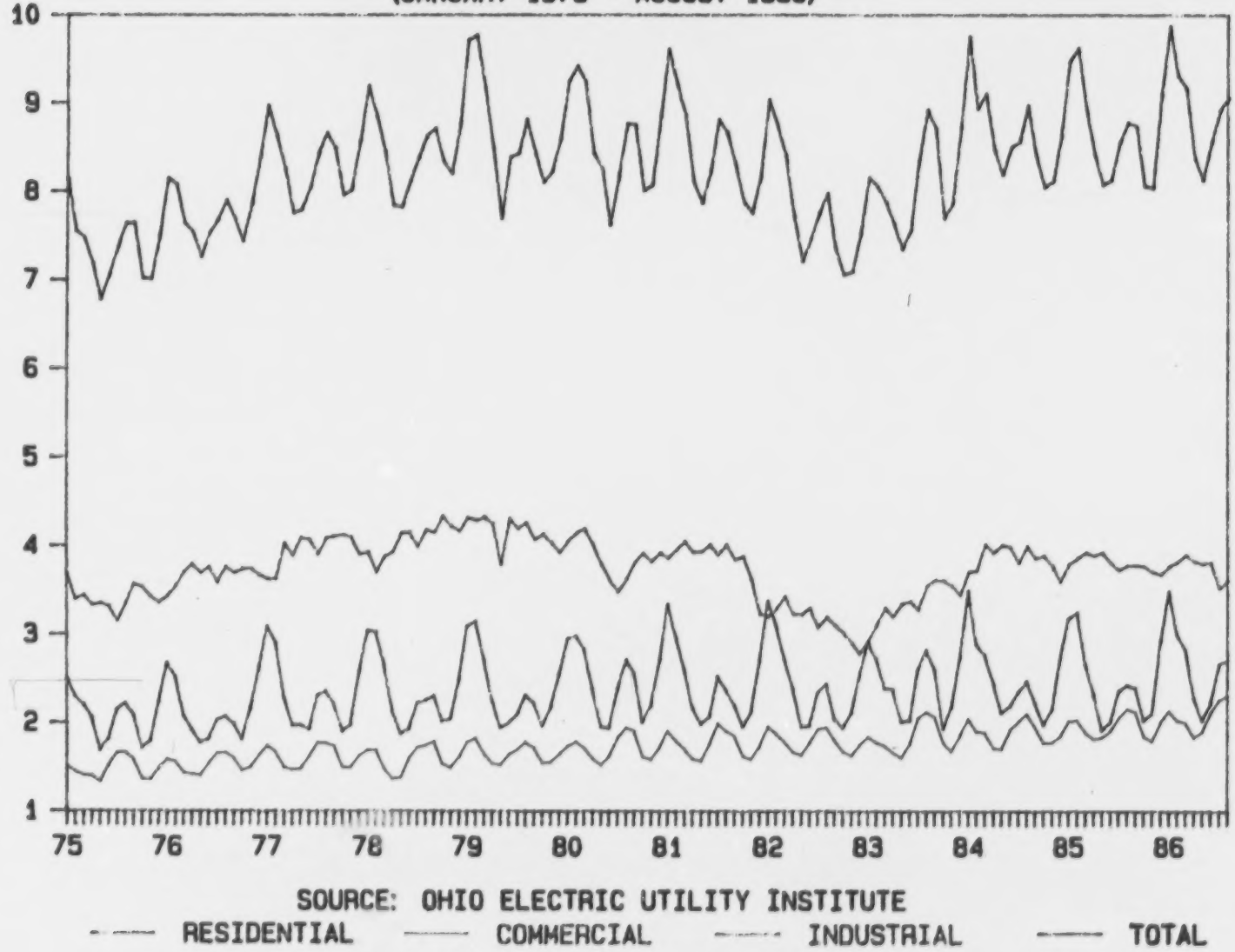


Table 7-A. Ohio Electric Utilities' Projected Deliveries, Consumption, and Stocks of Coal for Electricity Generation, 1986-1987 (1000 Short Tons)

	November	December	January	February	March	April	May	June	July	August	September	October	Total
Allegheny Power System													
Deliveries	1,173	1,328	1,545	1,484	1,399	1,392	1,225	1,422	1,343	1,444	1,506	1,404	16,775
Consumption	1,242	1,364	1,458	1,310	1,359	1,205	1,208	1,232	1,270	1,303	1,208	1,220	15,379
Stocks	2,766	2,760	2,847	3,021	3,061	3,248	3,365	3,555	3,628	3,769	4,067	4,251	
American Electric Power													
Deliveries	3,229	3,518	3,682	3,678	3,627	3,502	3,637	3,344	3,190	3,666	3,484	3,141	42,098
Consumption	3,193	3,600	4,033	3,395	3,508	3,128	2,970	3,214	3,659	3,666	3,107	3,141	40,656
Stocks	10,961	10,879	10,728	10,811	10,850	11,224	11,891	12,221	11,752	11,752	12,129	12,129	
Buckeye Power Inc.													
Deliveries	132	136	179	130	158	169	167	161	139	185	186	193	1,977
Consumption	133	198	207	186	195	140	133	184	201	200	119	195	2,091
Stocks	518	456	428	392	355	384	418	395	333	318	385	385	
Cincinnati Gas & Electric													
Deliveries	475	535	545	470	525	390	495	495	563	685	590	545	6,275
Consumption	474	535	545	470	528	389	452	497	562	586	492	295	5,926
Stocks	892	892	892	892	889	890	893	891	893	992	1,090	1,240	
Cleveland Electric Illuminating													
Deliveries	396	378	404	408	353	393	416	449	435	406	415	272	4,825
Consumption	396	378	404	408	353	325	351	371	365	336	345	322	4,354
Stocks	706	706	706	706	706	774	839	917	987	1,057	1,127	1,177	
Dayton Power and Light													
Deliveries	623	670	723	645	677	524	574	606	636	638	503	580	7,399
Consumption	623	670	747	645	677	524	574	606	636	638	503	580	7,423
Stocks	1,064	1,064	1,040	1,040	1,040	1,040	1,040	1,040	1,040	1,040	1,040	1,040	
Ohio Edison													
Deliveries	641	640	597	506	563	525	489	476	489	508	573	609	6,616
Consumption	585	572	572	509	557	554	502	409	445	462	467	503	6,137
Stocks	1,270	1,338	1,363	1,360	1,366	1,337	1,324	1,391	1,435	1,481	1,587	1,693	
Ohio Valley Electric Corp													
Deliveries	634	653	654	593	668	669	663	672	718	719	650	677	7,970
Consumption	611	630	620	559	612	613	607	616	662	664	594	622	7,410
Stocks	1,202	1,225	1,259	1,293	1,349	1,405	1,461	1,517	1,573	1,628	1,684	1,739	
Toledo Edison													
Deliveries	109	122	128	123	127	125	129	110	83	147	152	148	1,513
Consumption	109	122	128	124	126	132	118	122	127	135	149	130	1,522
Stocks	302	302	302	301	312	305	316	304	260	272	275	293	

NOTE: NUMBERS MAY NOT SUM TO TOTAL DUE TO INDEPENDENT ROUNDING

Source: OOOE Form EE-3.

Table 7-8. Ohio Electric Utilities' Projected Deliveries, Consumption, and Stocks of Oil for Electricity Consumption, 1986-1987 (1000 Bbls.)

	November	December	January	February	March	April	May	June	July	August	September	October	Total
Allegheny Power System													
Deliveries	0	0	0	0	0	0	0	0	0	0	0	0	0
Consumption	0	0	0	0	0	0	0	0	0	0	0	0	0
Stocks	142	142	142	142	142	142	142	142	142	142	142	142	
American Electric Power System													
Deliveries	47	51	46	41	44	35	40	49	39	46	35	39	512
Consumption	47	51	46	41	44	35	40	49	39	46	35	39	512
Stocks	246	246	246	246	246	246	246	246	246	246	246	246	
Buckeye Power System													
Deliveries	3	3	3	3	2	2	2	2	2	2	2	2	28
Consumption	3	3	3	3	2	2	2	2	2	2	2	2	28
Stocks	15	15	15	15	15	15	15	15	15	15	15	15	
Cincinnati Gas and Electric													
Deliveries	0	0	0	10	0	10	0	10	10	0	20	10	70
Consumption	8	6	11	7	7	9	2	7	7	9	22	10	105
Stocks	92	86	75	78	71	72	70	73	76	67	65	65	
Cleveland Electric Illuminating													
Deliveries	18	33	41	68	38	38	23	34	21	38	35	45	432
Consumption	18	33	41	68	38	38	23	34	21	38	35	45	432
Stocks	158	158	158	158	158	158	158	158	158	158	158	158	
Dayton Power and Light													
Deliveries	3	3	3	2	11	4	1	2	3	3	6	4	45
Consumption	4	3	8	3	3	3	2	2	3	3	4	4	44
Stocks	279	279	273	272	279	280	279	278	278	277	279	279	
Ohio Edison													
Deliveries	5	5	7	4	4	4	1	2	1	1	1	2	37
Consumption	5	5	7	4	4	4	1	2	1	1	1	2	37
Stocks	36	36	36	36	36	36	36	36	36	36	36	36	
Ohio Valley Electric Corp.													
Deliveries	2	2	2	2	2	2	2	2	2	2	2	2	20
Consumption	2	2	2	2	2	2	2	2	2	2	2	2	20
Stocks	6	6	6	6	6	6	6	6	6	6	6	6	
Toledo Edison													
Deliveries	44	94	116	188	91	98	121	137	124	170	143	129	1,455
Consumption	44	94	116	188	91	98	121	137	124	170	143	129	1,455
Stocks	300	300	300	300	300	300	300	300	300	300	300	300	

Source: DOE Form EE-3.

TABLE 7-C ELECTRIC UTILITIES' GENERATION FORECAST, FUEL ASSESSMENT AND INVENTORY MODEL
(NOVEMBER 1986 - OCTOBER 1987)

ALLEGHENY POWER SYSTEM

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST(GWH) EST DEMAND GEN BY COAL	3178	3507	3731	3338	3492	3103	3087	3154	3237	3333	3091	3122	39373
PROJ DAILY CONSUMPTION COAL (1000 TONS)	41	44	47	47	44	40	39	41	41	42	40	39	
COAL DELIVERIES IN 1000 TONS	1173	1338	1545	1484	1399	1392	1325	1422	1343	1444	1506	1404	
END OF MONTH STOCK COAL (1000 TONS)	2786	2760	2847	3021	3061	3248	3365	3555	3628	3769	4067	4251	
NUMBER OF DAYS SUPPLY COAL	67	63	61	65	70	81	86	87	89	90	101	108	

AMERICAN ELECTRIC POWER SYSTEM

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST(GWH) EST DEMAND GEN BY COAL	7317	8409	9543	8481	8408	7315	6954	7532	8555	8598	7287	7419	95818
PROJ DAILY CONSUMPTION COAL (1000 TONS)	105	116	130	128	116	104	96	107	118	118	104	101	
COAL DELIVERIES IN 1000 TONS	3229	3518	3882	3678	3627	3502	3637	3544	3190	3666	3484	3141	
END OF MONTH STOCK COAL (1000 TONS)	10961	10879	10728	10811	10850	11224	11891	12221	11752	11752	12129	12129	
NUMBER OF DAYS SUPPLY COAL	104	94	82	84	94	108	124	114	100	99	117	120	

TABLE 7-C ELECTRIC UTILITIES' GENERATION FORECAST, FUEL ASSESSMENT AND INVENTORY MODEL
(NOVEMBER 1986 - OCTOBER 1987)

CINCINNATI GAS & ELECTRIC

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST(GWH) EST DEMAND GEN BY COAL	1048	1195	1266	1090	1223	910	1043	1145	1302	1355	1128	912	13618
PROJ DAILY CONSUMPTION COAL (1000 TONS)	16	17	18	17	17	13	15	17	18	19	16	13	
COAL DELIVERIES IN 1000 TONS	475	535	545	470	525	390	455	495	565	685	590	545	6275
END OF MONTH STOCK COAL (1000 TONS)	892	892	892	892	889	890	893	891	893	992	1090	1240	
NUMBER OF DAYS SUPPLY COAL	56	52	51	53	52	69	61	54	49	52	66	97	

CLEVELAND ELECTRIC ILLUMINATING COMPANY

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST(GWH) EST DEMAND GEN BY COAL	1464	1468	1579	1379	1436	1326	1338	1428	1456	1428	1381	9696	25579
PROJ DAILY CONSUMPTION COAL (1000 TONS)	13	12	13	15	11	11	11	12	12	11	12	10	
COAL DELIVERIES IN 1000 TONS	396	378	404	408	353	393	416	449	435	406	415	372	
END OF MONTH STOCK COAL (1000 TONS)	706	706	706	706	706	774	839	917	967	1037	1127	1177	
NUMBER OF DAYS SUPPLY COAL	53	58	54	48	62	71	74	74	84	98	98	113	

TABLE 7-C ELECTRIC UTILITIES' GENERATION FORECAST, FUEL ASSESSMENT AND INVENTORY MODEL
(NOVEMBER 1986 - OCTOBER 1987)

DAYTON POWER & LIGHT

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST(GWH) EST DEMAND GEN BY COAL	1317	1624	1806	1552	1628	1265	1393	1473	1519	1518	1186	1406	17887
PROJ DAILY CONSUMPTION COAL (1000 TONS)	21	22	24	23	22	17	19	20	21	21	17	19	
COAL DELIVERIES IN 1000 TONS	623	670	723	645	677	524	374	606	636	638	503	580	
END OF MONTH STOCK COAL (1000 TONS)	1064	1064	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	
NUMBER OF DAYS SUPPLY COAL	51	49	43	45	48	60	56	51	51	51	62	56	

OHIO EDISON SYSTEM

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST(GWH) EST DEMAND GEN BY COAL	1317	1271	1275	1151	1254	1269	1140	924	1013	1050	1060	1150	13874
PROJ DAILY CONSUMPTION COAL (1000 TONS)	20	18	18	18	18	18	16	14	14	15	15	15	
COAL DELIVERIES IN 1000 TONS	641	640	597	506	563	525	489	476	489	508	573	609	
END OF MONTH STOCK COAL (1000 TONS)	1270	1338	1363	1360	1366	1337	1324	1391	1435	1481	1587	1693	
NUMBER OF DAYS SUPPLY COAL	63	73	74	75	76	72	82	102	100	99	102	104	

TABLE 7-C ELECTRIC UTILITIES' GENERATION FORECAST, FUEL ASSESSMENT AND INVENTORY MODEL
(NOVEMBER 1986 - OCTOBER 1987)

OHIO VALLEY ELECTRIC CORPORATION

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST(GWH) EST DEMAND GEN BY COAL	1433	1498	1473	1325	1462	1458	1427	1429	1515	1515	1373	1460	17368
PROJ DAILY CONSUMPTION COAL (1000 TONS)	20	20	20	20	20	20	20	21	21	21	20	20	
COAL DELIVERIES IN 1000 TONS	634	653	654	593	668	669	663	672	718	719	650	677	
END OF MONTH STOCK COAL (1000 TONS)	1202	1225	1259	1293	1349	1405	1461	1517	1573	1628	1684	1739	
NUMBER OF DAYS SUPPLY COAL	59	60	63	65	68	69	75	74	74	76	85	87	

TOLEDO EDISON

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST(GWH) EST DEMAND GEN BY COAL	[illegible]	320	338	326	334	350	315	327	338	361	395	346	4035
PROJ DAILY CONSUMPTION COAL (1000 TONS)	4	4	4	4	4	4	4	4	4	4	5	4	
COAL DELIVERIES IN 1000 TONS	109	122	128	123	137	125	129	110	83	147	152	148	
END OF MONTH STOCK COAL (1000 TONS)	302	302	302	301	312	305	316	304	260	272	275	293	
NUMBER OF DAYS SUPPLY COAL	83	77	73	68	77	69	83	75	63	62	55	70	

3. NATURAL GAS

Natural gas distribution companies operating in Ohio are classified into two categories with respect to their reporting requirements. Eight major companies, Cincinnati Gas and Electric, Columbia Gas of Ohio, Dayton Power and Light, East Ohio Gas, National Gas and Oil, Ohio Gas, River Gas, and West Ohio Gas, report to the PUCO, Division of Forecasting and Siting every month. Eighteen small utilities and two municipal utilities report twice a year. This section is based upon the most recent reports of these utilities.

3.1. Supplies and Distribution

3.1.1. Sources of Supply

The major sources of natural gas supplies to the State of Ohio are presented in Table 8, and the quantities supplied are shown graphically in Figure 6. From September 1985 through August 1986, the eight major gas distribution companies of Ohio, which together account for

98.41 percent of the reported natural gas distribution in the State, procured 634,601 MMCF of natural gas to meet Ohio's requirements. This represents a 5.3 percent decrease in the supplies of natural gas to Ohio compared to the same period in the previous twelve months.

Of the 634,601 MMCF total procurement, interstate gas purchases and synthetic natural gas (SNG) comprise 89.51 percent. Purchases of Ohio gas comprise the remaining 10.49 percent of the total. The 66,543 MMCF of Ohio production of natural gas purchased by the eight major gas utilities from September 1985 through August 1986 represents a 1.94 percent increase in their purchases of Ohio's product from the preceding annual period. This amount corresponds to approximately 36.5 percent of the State's total production of 182,245 MMCF in calendar year 1985. Most of the remainder of Ohio natural gas production is transported directly to industrial end-users under the industrial self-help programs instituted by the PUCO in 1974.

Domestic interstate gas is the major source of supply for Ohio. Columbia Gas Transmission Corporation and Consolidated Gas Supply Corporation provided 52.2 percent

of the natural gas supplied to the eight major Ohio gas distribution companies from September 1985 through August 1986.

3.1.2. Distribution

Service shares of the gas distribution companies operating in Ohio are presented in Table 9 for the annual period September 1985 through August 1986. During this period, the four large distribution companies - Cincinnati Gas and Electric, Columbia Gas of Ohio, Dayton Power and Light and East Ohio Gas - jointly distributed 94.09 percent of the reported natural gas requirements of the State. The four intermediate sized companies - National Gas and Oil, Ohio Gas, River Gas and West Ohio Gas - distributed an additional 4.32 percent. The remaining 1.59 percent of the reported natural gas requirements were distributed by 18 small utilities and two municipal utilities. Total requirements of 644,824 MMCF reported in Table 9 represent a decrease of approximately 5.4 percent in the distribution of natural gas compared to the same period last year.

The behavior of monthly sectoral requirements between

September 1985 and August 1986 versus the preceding annual period are comparatively presented in Figures 7-A through 7-C. As these Figures illustrate, residential sector requirements increased 0.6 percent, commercial sector requirements decreased 1.3 percent and industrial sector requirements decreased a dramatic 23.3 percent (this does not include industrial requirements met through the self-help program or other direct purchases by industrial end-users, i.e. non-tariff sales). Figure 7-D combines the three sectors to comprise the total consumption for the State which, as mentioned above, decreased 5.4 percent from the previous year. Figure 7-E reveals the monthly relationship of each sector to the total requirement trend, from January 1971 through August 1986.

3.2. Historical Behavior of Interstate Natural Gas Supplies And Sectoral End-Use Requirements

3.2.1. Interstate Natural Gas Supplies

Until 1978, wellhead prices paid by interstate transmission companies to natural gas producers were under federal control. Starting in the early seventies, and especially after the OPEC oil price increase of 1973, the

federally-regulated gas supply prices for interstate commerce lagged behind the unregulated prices which the product commanded at the wellhead for intrastate commerce. Consequently, there were supply shortages in the interstate natural gas markets during the heating season, whereas producing states such as Texas and Louisiana experienced an overabundance of supplies at all times.

In Ohio, which was about 90 percent dependent on interstate gas, a ban was imposed upon new customer hook-ups in 1972 which remained in effect until 1978. Similarly, base allocations of lower priority industrial and commercial customers were curtailed between 1973 and 1978. During the winter of 1976-77, many interstate pipeline companies had to heavily curtail base allocations of their industrial customers due to lack of interstate gas supplies.

The Natural Gas Policy Act (NGPA), which became effective in 1978, deregulated some gas prices immediately, and legislated a phased decontrol of prices for many categories of natural gas by 1985. Pursuant to the passage of the NGPA, relatively unfettered increases in interstate gas prices have stimulated new and more

costly gas production from deep wells, thus increasing available supplies. However, many pipeline companies overreacted to market conditions by entering into extensive take or pay contracts for the newly found and expensive deep gas reserves.

Increasing energy prices from 1972 induced intensive conservation efforts on the part of consumers, as well as many state, federal and private agencies. As a result of these price induced conservation efforts, per customer consumption in general, and per customer natural gas consumption in particular, have declined almost continuously since 1972 - 1973. With the additional unfettered increases in natural gas costs of interstate pipeline companies between 1978 - 1982, the price of natural gas supplied by them rose well above the market equilibrium level dictated by the prevailing per customer demands and the enhanced availability of supplies.

This situation led to the development of a spot market for natural gas, where the price for large enough volume purchases was substantially lower than the price that interstate natural gas companies could offer due to their take or pay costs which required payment regardless

of whether or not they actually distributed the gas. Consequently, increasing numbers of industrial customers obtained their requirements through direct purchases at the wellhead or through the spot market. The interstate pipelines and natural gas distribution utilities are being increasingly relegated to the position of common carriers of the natural gas of others. Recent FERC rulings have been supportive of this opening up of a regulated market to competitive pressures.

Since 1983, declining per customer requirements, enhanced supplies, and the thriving spot market have induced a downturn in natural gas prices to end-users in all sectors

3.2.2. Annual Sectoral End-Use Requirements

Long-term trends in annual sectoral natural gas prices and sectoral natural gas requirements for Ohio are presented in Tables 10 and 11, and Figures B-5 through B-8. It is clear from these figures that the dynamic behavior of natural gas markets in Ohio have been characterized by increasing price trends from 1973 to 1983 and declining requirement trends since 1973.

As discussed in the preceding section, between 1970 and 1983, in response to a series of worldwide price shocks including the OPEC oil price increases of 1973 and 1978, the price of natural gas in Ohio increased nearly sevenfold in the residential and commercial sectors, and ninefold in the industrial sector (see Table 10). These price increases far exceeded the increase in the rate of inflation (see Table 11), or the rate of increase of the gross state product. Such significant and sustained increases in sectoral prices have induced significant and sustained conservation efforts among sectoral customers, which in turn have been translated into declining sectoral requirement trends.

In recent years industrial non-tariff sales, such as self-help procurements, have come to account for an ever increasing share of the total industrial requirement in Ohio (see Tables 15-A and 15-B). This is due to the fact that non-tariff sales prices are determined in the spot market and are lower than the regulated prices for industrial tariff sales. The latter category of sales has to reflect fully the fixed and variable costs of gas procurement and distribution, including take or pay

contract costs and distribution company revenue requirements.

It should be noted, however, that the declining trends in industrial sector requirements represent not only the net outcomes of price induced energy conservation and fuel switching programs, but also a permanent loss in industrial capacity, especially in the older and more energy intensive manufacturing industries of the economy.

3.2.3. Monthly Sectoral End-Use Requirements

The monthly time series behavior of residential, commercial, industrial and total natural gas requirements in Ohio from January 1976 through October 1986, along with the Division's independent forecasts for November 1986 through October 1987 are displayed in Figures B-1 through B-4. The seasonal variations in residential and commercial requirements can easily be discerned from these Figures. Natural gas is the primary source of space heating in Ohio. Demand peaks in all sectors during the heating season and falls off during the cooling season. (It may be of interest to note the dramatic effects of the curtailments imposed on the industrial sector during the

1976-77 heating season which is clearly discernable in Figure B-3.)

3.3. Utility Forecasts: Consolidated Results and Twelve Month Outlook

3.3.1. Consolidated Results

Aggregate supply and demand projections of the eight major utilities, as presented in Table 12 and Figure 8, indicate a 0.0 percent annual surplus of natural gas supplies over requirements. All eight utilities project supply to be exactly equal to requirements during the 1986-1987 heating season. Supply and demand projections of the individual utilities, as submitted in their "Monthly Reports of Supply and Demand of Natural Gas", are summarized in Appendix B, Table B-9.

Table 13 shows the actual aggregate monthly sectoral requirements for the eight major utilities from September 1985 through August 1986, along with the utilities' consolidated projections for the September 1986 through August 1987 period. The forecast shows decreases in demand in the commercial and industrial sectors and a slight increase in demand in the residential sector.

Figure 9 is a graphic presentation of the utilities' consolidated sectoral projections for the forecast period. Overall, the forecast total annual gas requirement shows a decrease of 1.9 percent relative to the same twelve month period last year.

Actual and forecast aggregate supply of natural gas by source is displayed in Table 14. Delivered product from all pipeline sources is expected to decrease 1.9 percent over the previous twelve month period. The majority of this supply, roughly 75 percent, will continue to come from out-of-state sources. Columbia Gas Transmission Corporation, by far the largest supplier to the State, is projected to supply 36.9 percent of natural gas demand.

3.3.2. Twelve Month Outlook

On the basis of the utilities' natural gas supply and sectoral requirement projections, the outlook for the next twelve months indicates no supply shortages in Ohio, under both normal and 10 percent colder than normal weather conditions.

The PUCO, Division of Forecasting and Siting will be

monitoring developments in the supplies and requirements of natural gas throughout the rest of the year and will take appropriate action if a critical situation develops. However, the Division of Forecasting and Siting's current conclusion is that prevailing conditions portend no shortages or curtailments of natural gas during the 1986-1987 heating season.

3.4. Division of Forecasting & Siting Independent Forecast

3.4.1. Methodology

The independent natural gas demand forecasts prepared by the Division of Forecasting and Siting for the eight major gas utilities serving Ohio are based upon time series analyses of sectoral requirements for each individual month of the year, between January 1970 and August 1986, adjusted for long-term annual trends, severe climatic conditions and the business cycle.

Time series models, with adjustments, yield projections that possess better statistical properties, and are at least as accurate as alternative short-term forecasting techniques. They also offer the added

flexibility of being able to produce updated forecasts which reflect and incorporate specific assumptions pertaining to the prevailing climatic and economic conditions every time the most recent actual monthly requirements are reported to the Division. The utilization of an adjusted time series methodology is designed to provide a double check, thus reducing forecasting error for a more accurate and decisive diagnosis of energy requirements of the State.

3.4.2. Special Assumptions

The relatively strong economic recovery experienced by the State is expected to level off throughout the forecasting horizon, with the unemployment rate remaining between 7.0 to 8.5 percent. Inflation is expected to remain below 3.0 percent, and the trend in natural gas prices will continue to decline at the same rate since 1983. FERC order RM85-1, which allows greater access to competively-priced gas available on the spot market, will further diminish the volume of natural gas sales to industrial customers by the utilities and increase the volume that is directly purchased by industrial customers

from out-of-state sources. However, the long-term total consumption trends in the industrial sector are not expected to change significantly (i.e. the sum of tariff and non-tariff sales).

3.4.3. Results

The results obtained on the basis of the Division of Forecasting and Siting's independent forecast of sectoral requirements and the utility companies' forecasts of supplies are presented in Tables 16 through 20, for the 1986-87 heating season. Summary results presented in Table 16 indicate a potential surplus of 1.6 percent under normal weather conditions and a potential surplus of 1.5 percent in the case of a 10 percent colder than normal winter.

The Division of Forecasting and Siting's independent forecasts for the four major utilities are compared with each company's forecast for the period from September 1986 through August 1987 in Appendix B, Tables B-1 through B-4. The Division's forecasts of sectoral end-use gas requirements for Ohio are presented in Appendix B, Tables B-5 through B-8. These have been adjusted for the long-

term historical trends observed in sectoral natural gas requirements in the State. Finally, for comparison, Appendix B, Table B-9 displays twelve month forecasts, produced monthly by each utility and reported to the Division of Forecasting and Siting.

3.4.4. Long-Term Outlook

Any unexpected changes in the short-term behavior of residential and commercial requirements would mainly be associated with variations in the severity of the heating season, and alterations in the long-term trends followed by natural gas prices. Given the current abundance of natural gas supplies, the deregulation of interstate natural gas prices by the NGPA and recent FERC policies which virtually require many interstate pipeline companies to act as common carriers, no supply induced pressures on natural gas prices for the next 4 to 6 years are expected. Given the price induced conservation efforts since 1972, and the dramatic declines in per customer natural gas consumption in the residential and commercial sectors since 1972, no demand induced pressures are expected for the 4 to 6 year horizon either. Therefore, the decline in

real natural gas prices observed since 1983 is expected to continue during the forecast horizon and stabilize in the near future.

In recent years, as previously explained in section 3.2.1, industrial sales of natural gas by utilities have decreased substantially. Part of this has been due to conservation, fuel switching and declining industrial activity in the basic industries. Another important factor has been the emergence of the spot market for interstate gas purchases by large volume industrial customers. An increasing portion of this decline has also been the result of self-help programs administered by the PUCO and fuel oil displacement programs administered by the Federal Energy Regulatory Commission (FERC).

The State of Ohio's self-help program was initiated in 1974 to assist industrial customers whose tariff supplies of natural gas were threatened with curtailments. The program permits industrial concerns to purchase their own gas at the wellhead and have it transported directly to their location by a gas distribution company. Throughout the mid and late 1970's, industrial consumers paid unregulated prices to producers and contracted for

delivery with the gas distribution companies, which charged a fee for transmission and were permitted receipt of up to 25 percent of the gas for their own customers. In April 1983, as a result of a natural gas surplus, the Public Utilities Commission of Ohio amended the self-help rules to rescind distribution company privileges to acquire ownership shares of self-help gas.

The difference in the cost of natural gas purchased through interstate pipeline companies versus the cost of natural gas purchased on the spot market provides the current incentive for industrial customers to purchase their own gas at the wellhead. In 1984, 34.46 percent of industrial gas requirements were met with self-help deliveries.

Self-help gas has emerged as a resource vital to the economic development of Ohio. Its cost advantage improves the competitive positions of participating industries. Also, self-help gas provides an additional market for Ohio gas producers and spurs competition in wellhead and burnertip prices.

Federally regulated marketing programs became significant in 1983 and have added to the loss of

customers mainly in industrial tariffs. Fuel oil displacement, special marketing programs regulated by FERC, and Ohio's self-help program accounted for 51.79 percent of Ohio industrial gas use in 1985.

The effective price discrimination between customer categories which is introduced into the gas market through special marketing programs should help Ohio's industry by making it possible for firms to take advantage of available input cost minimization opportunities. However, it also implies that a greater proportion of fixed costs involved in the procurement and distribution of natural gas will have to be born by industrial tariff customers, whose ranks may virtually disappear in the next decade if present trends continue. These fixed costs will also be passed on to the residential and commercial customer for whom information, contract costs, or minimum volume requirements may simply prohibit them from participating in the programs. The growth of non-tariff industrial sales in Ohio is documented in Tables 15-A and 15-B.

3.4.5. Emergency Response Capability

There have been no natural gas curtailments in Ohio

since 1978, and neither Ohio gas utilities nor the gas pipeline companies project any curtailments through August 1987. However, in the event of a shortage, it is anticipated that the fuel-switching capability of industrial and large commercial users would be accelerated. Detailed emergency plans that describe strategies to respond to fuel supply shortfalls are on file at the PUCO, Division of Forecasting and Siting.

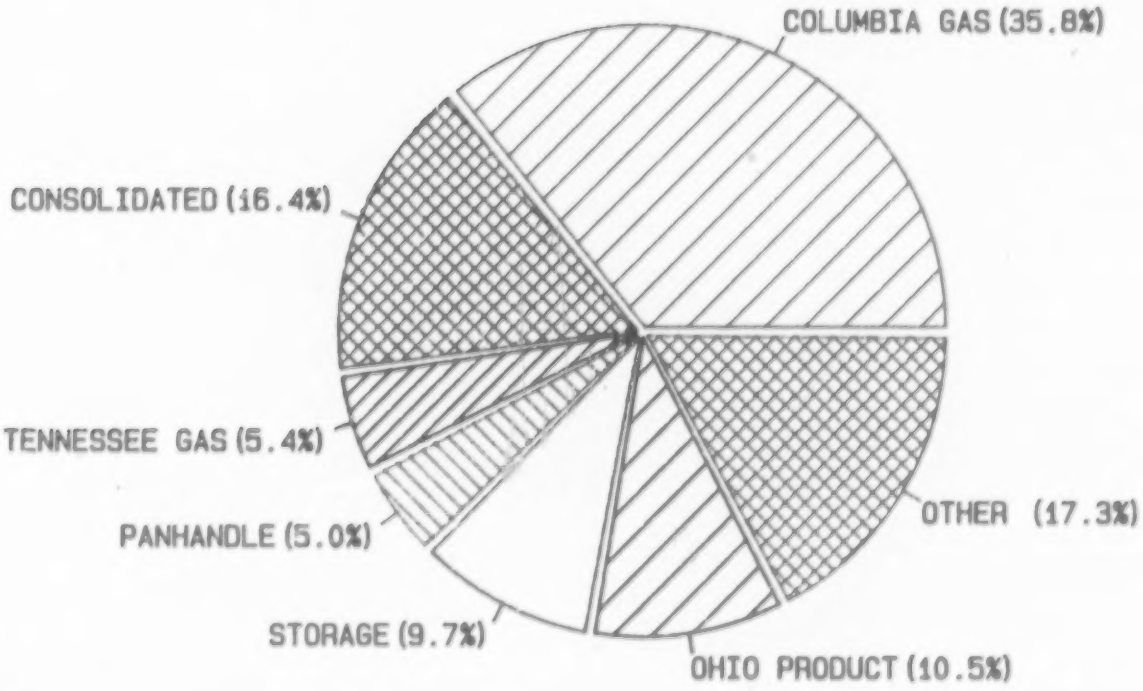
Table 8: Sources of Natural Gas Supplies to the Eight Major Gas Utilities, September 1985 through August 1986 (MMCF)

	Supply	Percent of Total	Rank
Columbia Gas Transmission Corp.	227059	35.78	1
Consolidated Gas Supply Corp.	104216	16.42	2
Lawrenceburg Gas	1115	0.18	10
Michigan/Wisconsin Pipeline Co.	686	0.11	11
Panhandle Eastern Pipeline Co.	31550	4.97	7
Tennessee Gas Pipeline Co.	34017	5.36	6
Texas Eastern Transmission Corp.	4189	0.66	8
Texas Gas Transmission Corp.	514	0.08	12
Green Springs (SNG) (Columbia LNG)	2150	0.34	9
Storage/Propane *	61597	9.71	5
Other	100965	15.91	3
Total SNG and Out-of-State	568058	89.51	
Ohio Product	66543	10.49	4
TOTAL	634601	100.00	

* Note: Gas withdrawn from storage represents a source during the period under consideration.

Source: ODOE Form SG-2.

FIG. 6. SOURCES OF NATURAL GAS SUPPLY FOR EIGHT MAJOR GAS UTILITIES (SEPT. 1985 - AUG. 1986)



Source: ODOE Form SG-2.

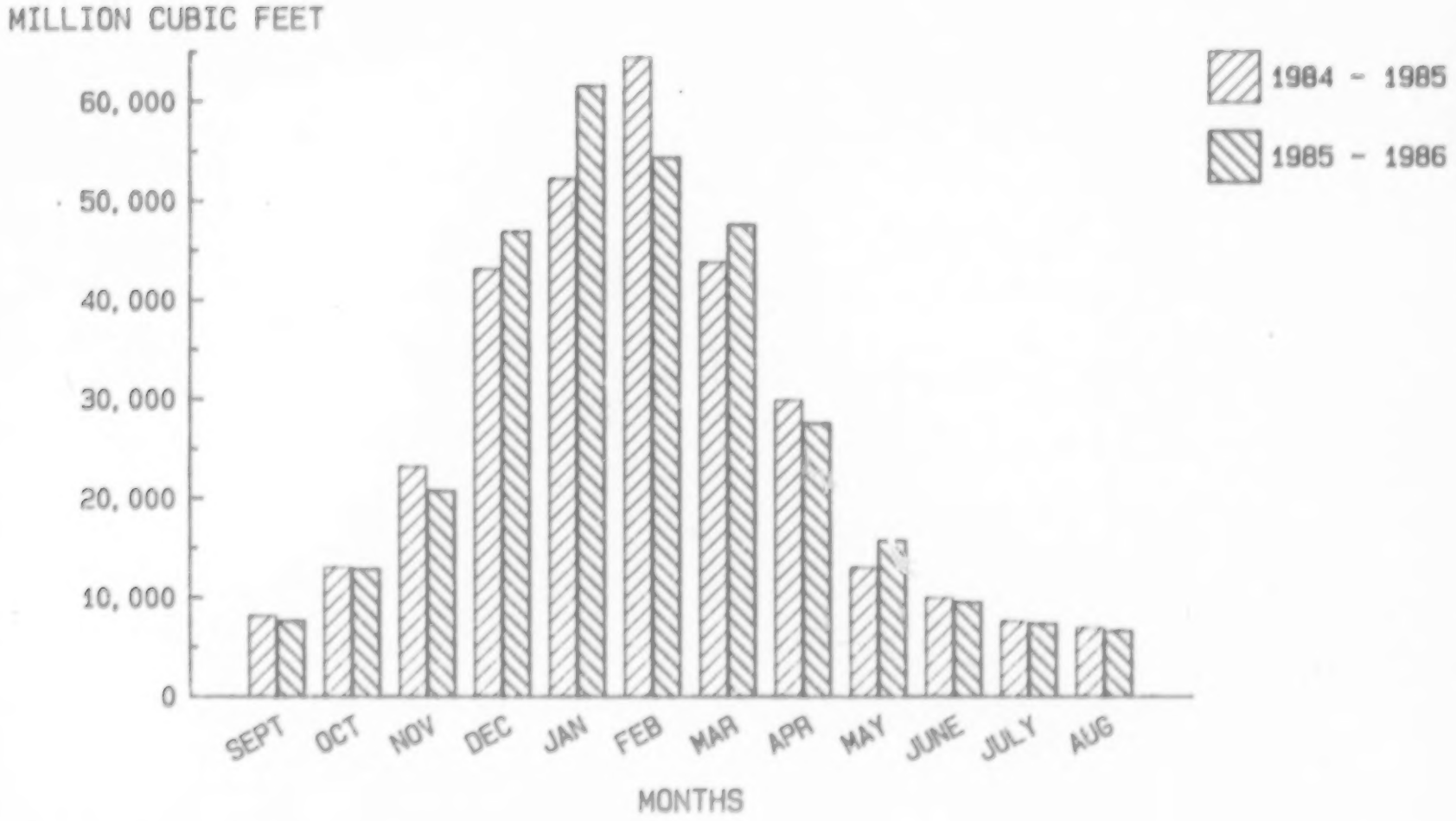
Table 9: Total Natural Gas Requirements of All Commercial Utilities in Ohio, September 1985 through August 1986 (MMCF)

	(1) Sales to All End Users	(2)* Storage (In)	Total Requirement (1+2)	Percent of Total Ohio Requirement
Cincinnati Gas and Electric Co.	68706	0	68706	10.65
Columbia Gas of Ohio	200020	0	200020	31.02
Dayton Power and Light Co.	49301	0	49301	7.65
East Ohio Gas Co.	228942	59776	288718	44.77
National Gas and Oil Co.	5451	570	6021	0.93
Ohio Gas Co.	7653	0	7653	1.19
River Gas Co.	3679	0	3679	0.57
West Ohio Gas Co.	10503	0	10503	1.63
Total Eight Major Utilities	574255	60346	634601	98.41
Total Small Utilities	4527	0	4527	0.70
Municipal Utilities	5696	0	5696	0.88
TOTAL ALL UTILITIES	584478	60346	644824	100.00

* NOTE: Gas restored to storage is a requirement of the State's natural gas utilities.

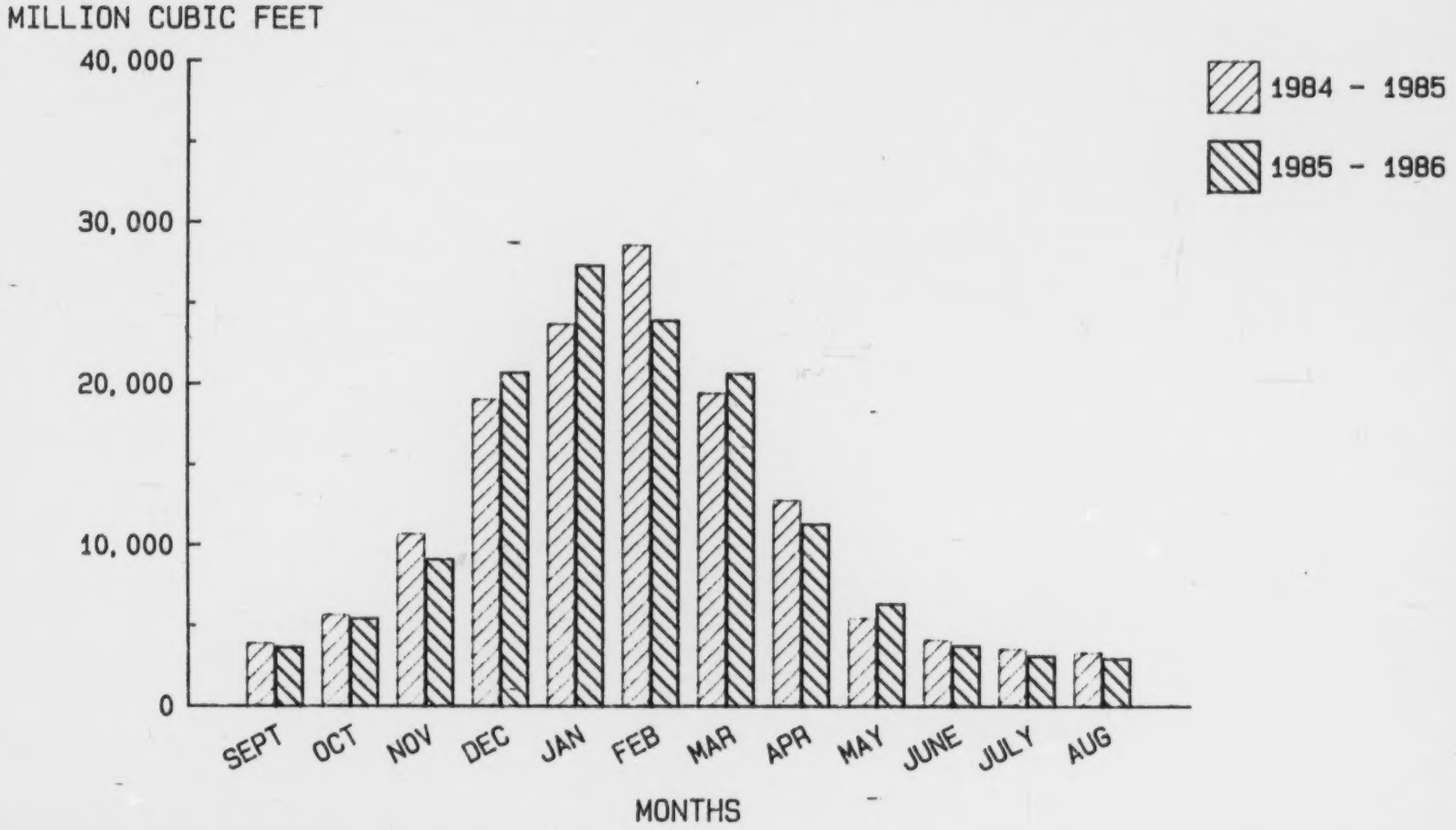
Source: ODOE Form SG-2 and SG-4.

FIG. 7-A. OHIO RESIDENTIAL SECTOR NATURAL GAS CONSUMPTION: 1984 - 1985 VS. 1985 - 1986



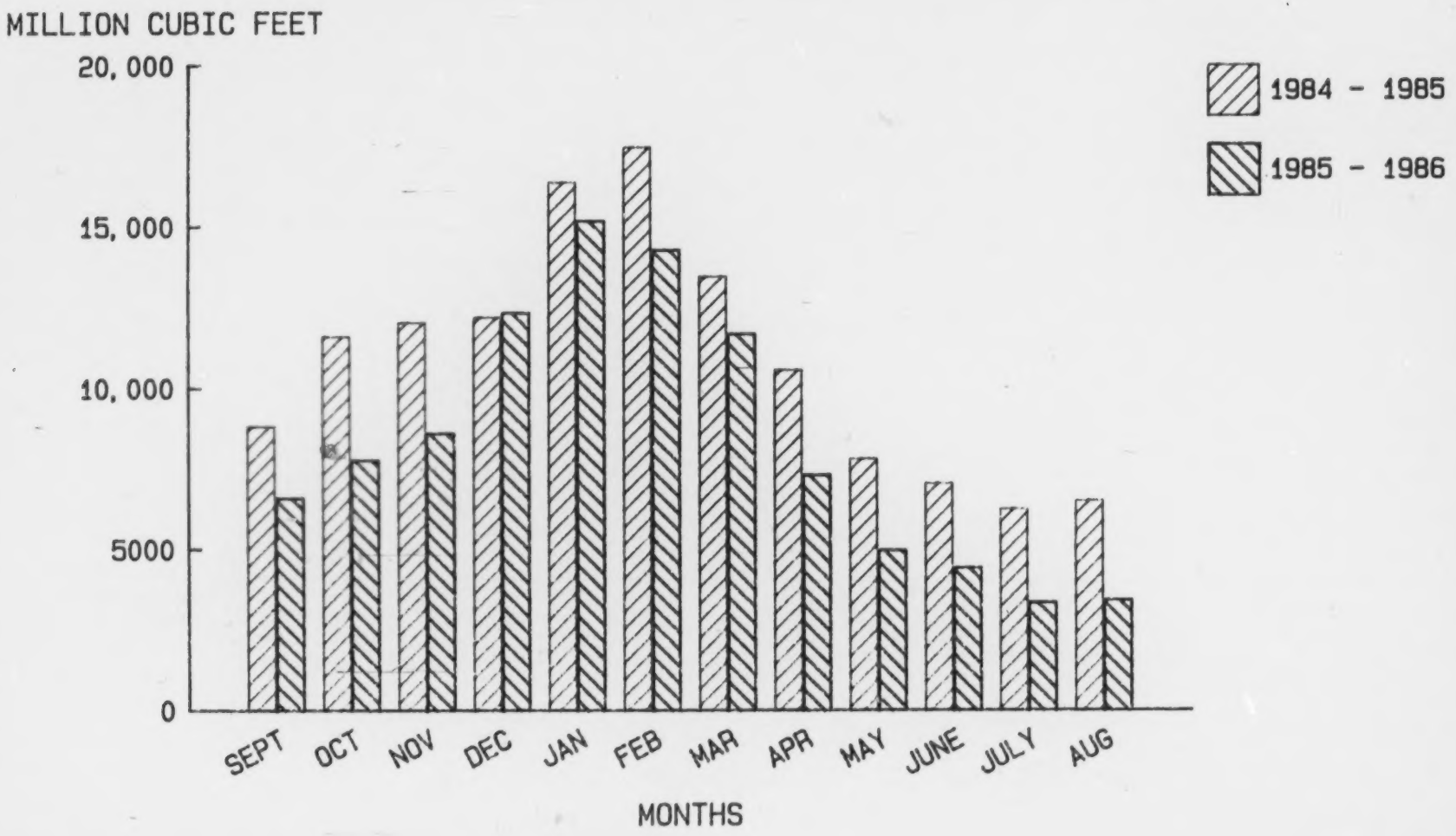
Source: The Division of Forecasting and Siting.

FIG. 7-B. OHIO COMMERCIAL SECTOR NATURAL GAS CONSUMPTION: 1984 - 1985 VS. 1985 - 1986



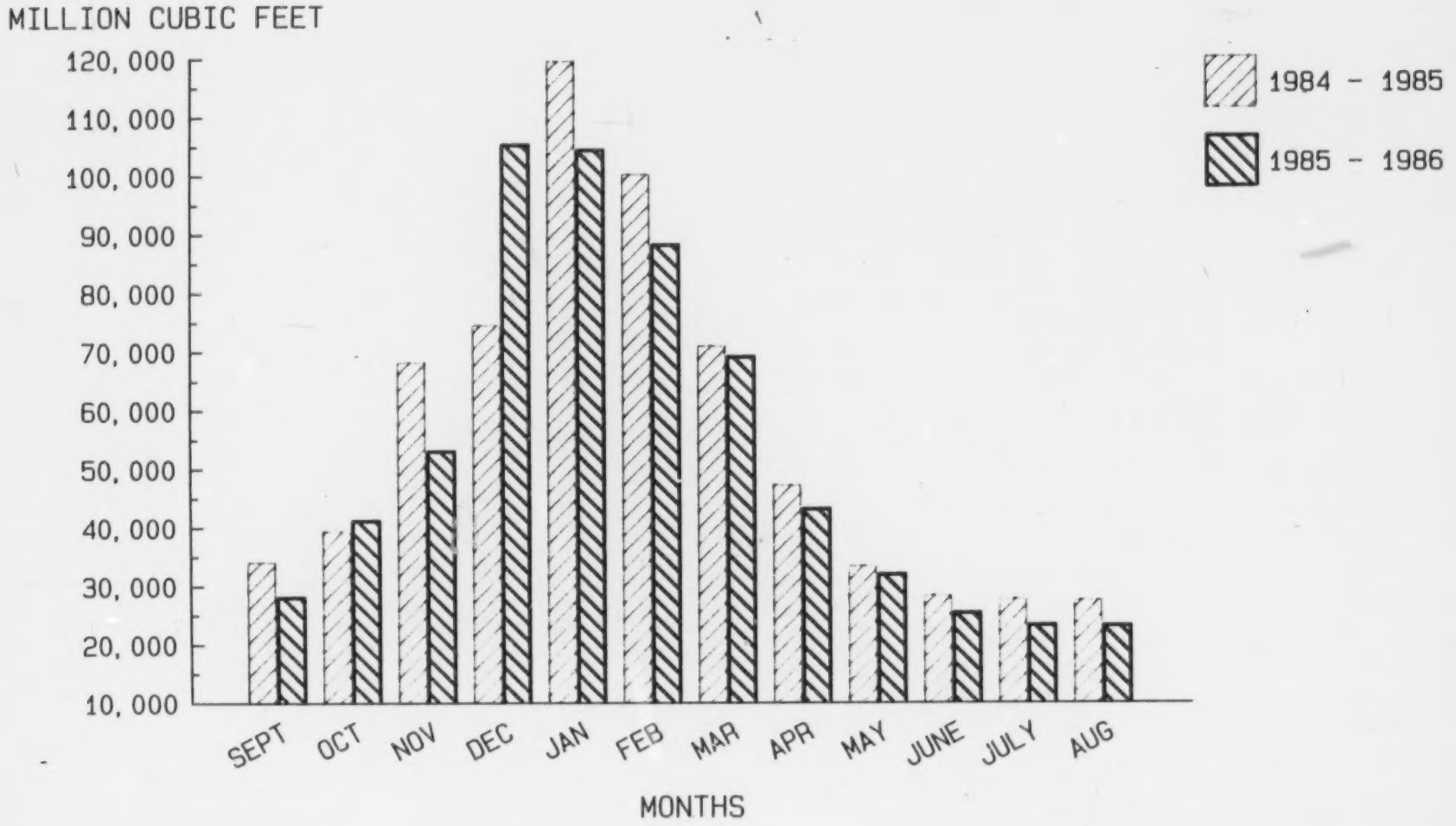
Source: The Division of Forecasting and Siting.

FIG. 7-C. OHIO INDUSTRIAL SECTOR NATURAL GAS CONSUMPTION: 1984 - 1985 VS. 1985 - 1986



Source: The Division of Forecasting and Siting.

FIG. 7-D. TOTAL OHIO NATURAL GAS CONSUMPTION: 1984 - 1985 VS. 1985 - 1986



Source: The Division of Forecasting and Siting.

FIG. 7–E. MONTHLY GAS CONSUMPTION

(JANUARY 1971 – AUGUST 1986)

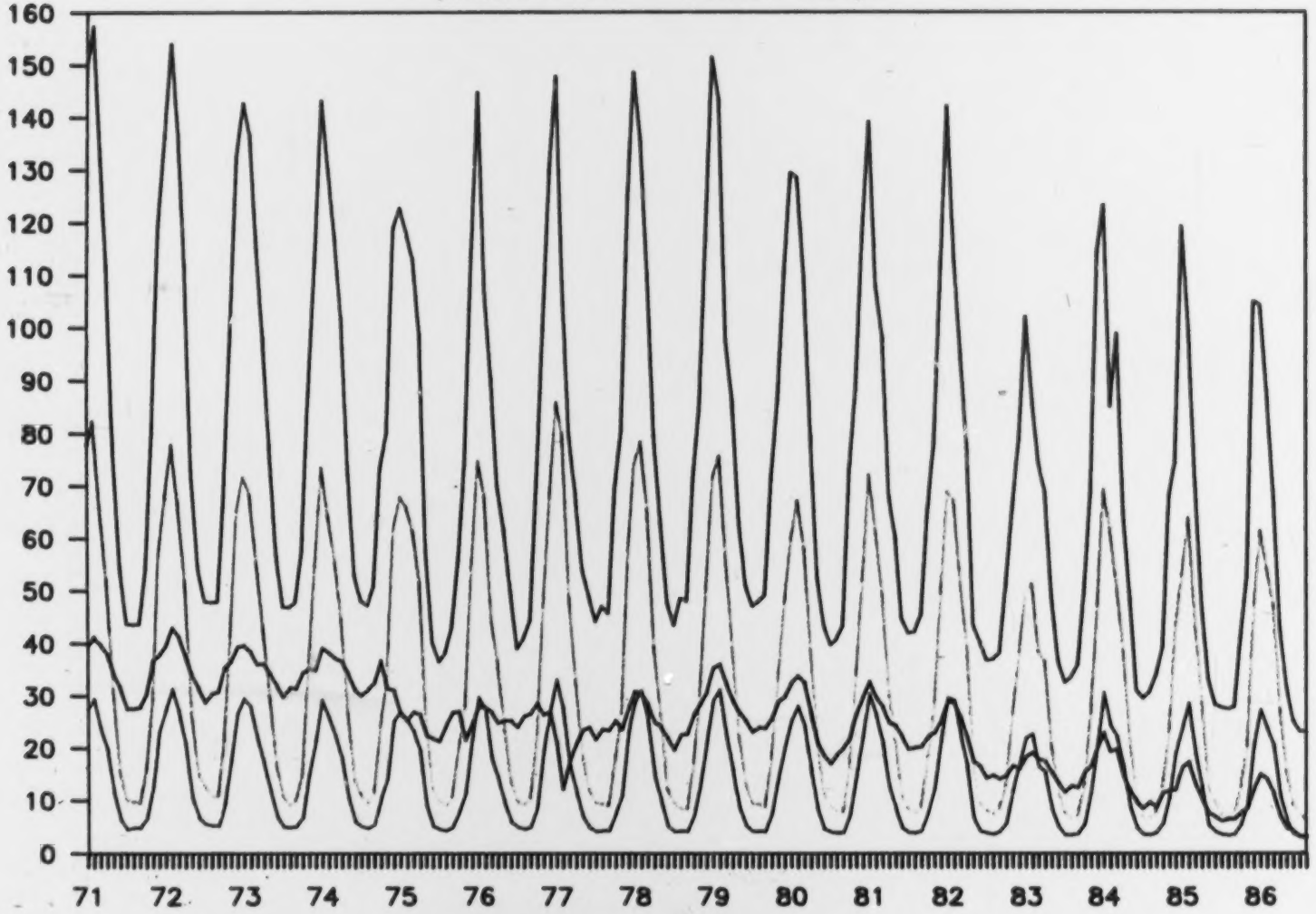


Table 10: Ohio Natural Gas Prices in Current Dollars, 1970-1985
($ Per MMBtu)

Year	Residential	Commercial	Industrial
1970	0.84	0.73	0.52
1971	0.96	0.81	0.56
1972	1.02	0.86	0.62
1973	1.08	0.94	0.65
1974	1.23	1.07	0.85
1975	1.51	1.35	1.12
1976	1.79	1.63	1.43
1977	2.23	2.07	1.95
1978	2.43	2.24	2.05
1979	2.78	2.57	2.32
1980	3.45	3.23	2.97
1981	3.87	3.61	3.34
1982	4.80	4.53	4.20
1983	5.90	5.54	5.01
1984	5.86	5.49	4.87
1985	5.82	5.38	4.69

Source: American Gas Association, Gas Facts, and PUCO, Division of Forecasting and Siting.

Table 11: Ohio Natural Gas Prices in Constant Dollars, 1970-1985
($ Per MMBtu)

Year	Residential	Commercial	Industrial
1970	0.72	0.63	0.45
1971	0.78	0.67	0.47
1972	0.81	0.69	0.49
1973	0.81	0.71	0.46
1974	0.83	0.72	0.58
1975	0.94	0.84	0.69
1976	1.05	0.96	0.84
1977	1.23	1.14	1.07
1978	1.24	1.15	1.05
1979	1.28	1.18	1.07
1980	1.40	1.31	1.20
1981	1.42	1.34	1.25
1982	1.66	1.57	1.45
1983	1.98	1.86	1.68
1984	1.88	1.76	1.57
1985	1.81	1.67	1.46

Note: All prices are stated in terms of 1967 dollars.

Source: American Gas Association, Gas Facts, 1970-1985 and PUCO, Division of Forecasting & Siting.

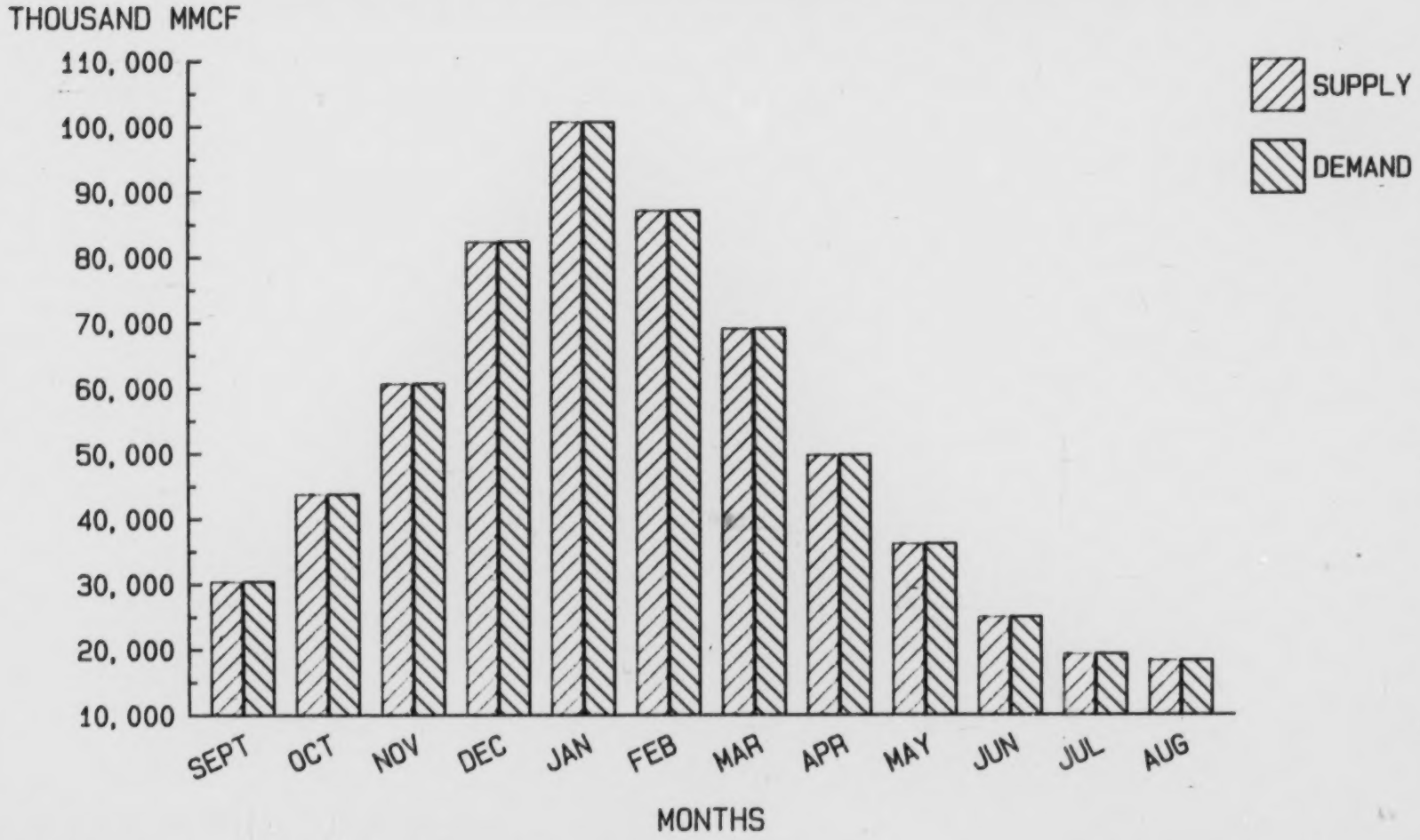
Table 12. Projected Aggregate Supply and Requirements for Natural Gas for Eight Major Utilities
September 1986 - August 1987
(MMCF)

	Supply	Demand	Deficiency	Percent Deficiency
SEPTEMBER	30424	30424	0	0.00
OCTOBER	43806	43806	0	0.00
NOVEMBER	60669	60669	0	0.00
DECEMBER	82333	82333	0	0.00
JANUARY	100596	100596	0	0.00
FEBRUARY	87082	87082	0	0.00
MARCH	68990	68990	0	0.00
APRIL	49706	49706	0	0.00
MAY	36154	36154	0	0.00
JUNE	24956	24956	0	0.00
JULY	19313	19313	0	0.00
AUGUST	18351	18351	0	0.00
TOTALS				
SUMMER	222710	222710	0	0.00
WINTER	399670	399670	0	0.00
ANNUAL	622380	622380	0	0.00

NOTE: A positive deficiency indicates a shortage;
A negative deficiency indicates a surplus.

SOURCE: ODOE FORM SG-1 and PUCO, Division of Forecasting & Siting.

FIG. 8. PROJECTED SUPPLY AND REQUIREMENTS OF NATURAL GAS BY SECTOR: TOTAL OF EIGHT MAJOR COMPANIES (SEPTEMBER 1986 - AUGUST 1987)



SOURCE: The Division of Forecasting and Siting.

TABLE 13 COMPARISON BETWEEN ONE YEAR OF ACTUAL AND FORECAST DEMAND FOR EIGHT MAJOR OHIO GAS UTILITIES BY SOURCE (MMCF)

COMPARISON BETWEEN 1 YEAR OF ACTUAL AND FORECAST DEMAND (IN MMCF) FOR 8 MAJOR OHIO GAS UTILITIES BY SECTOR

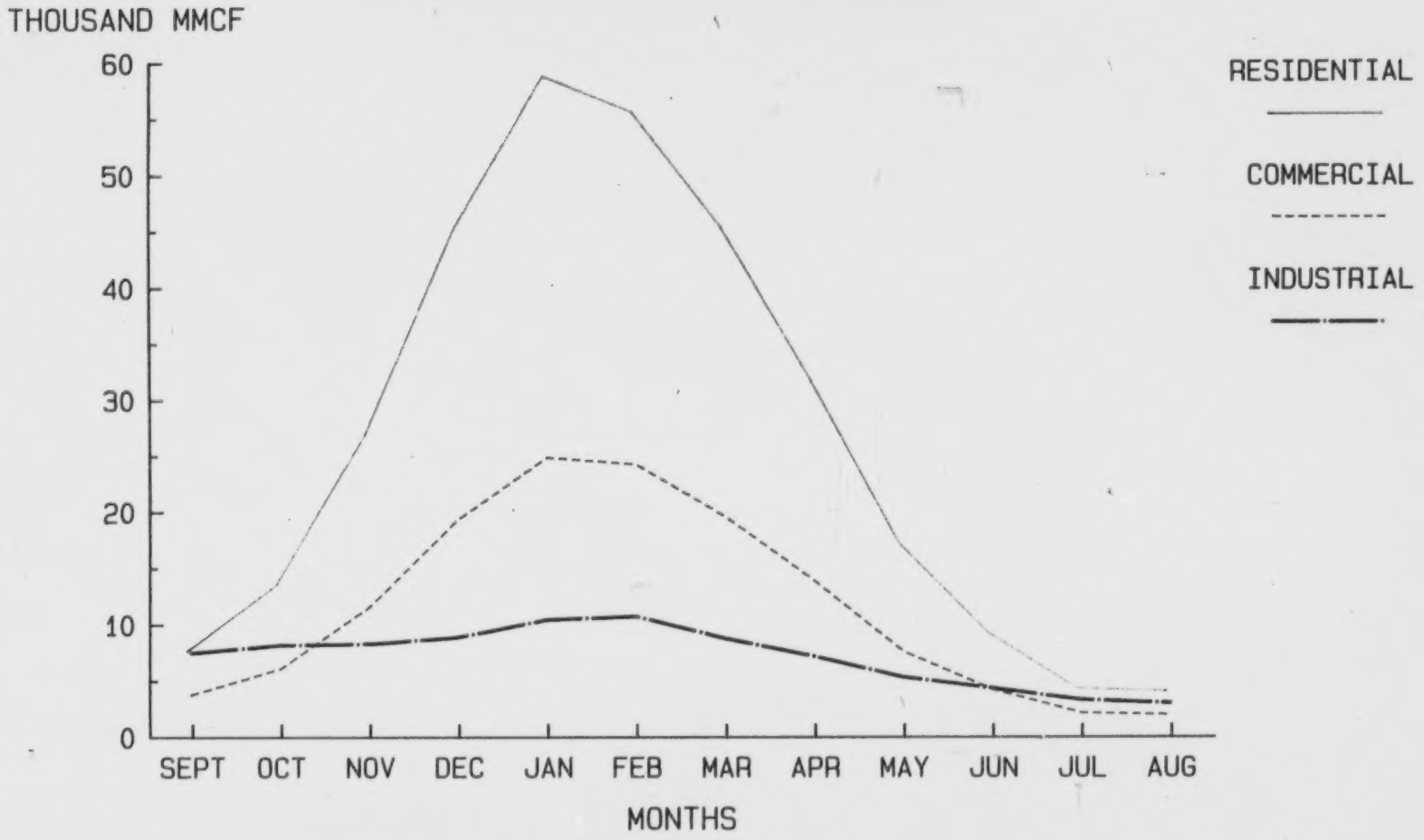
MONTH/YEAR	DEGREE DAYS	RESIDENTIAL REQUIREMENT	COMMERCIAL REQUIREMENT	INDUSTRIAL REQUIREMENT	OTHER REQUIREMENT	STORAGE (IN)	TOTAL REQUIRLMENT	DEFICIENCY
9/86	87	7641	3684	7469	3020	8610	30424	0
9/85	87	7685	3710	6625	1351	8618	27989	0
	0.0%	-0.6%	-0.7%	12.7%	123.5%	-0.1%	8.7%	0.0%
10/86	334	13526	5982	8175	8521	7602	43806	0
10/85	334	12942	5492	7791	6784	8047	41056	0
	0.0%	4.5%	8.9%	4.9%	25.6%	-5.5%	6.7%	0.0%
11/86	690	26875	11467	8268	10201	3858	60669	0
11/85	686	20008	9155	8620	11876	2425	52084	0
	0.6%	29.2%	25.3%	-4.1%	-14.1%	59.1%	14.7%	0.0%
12/86	1052	45192	19239	8851	9051	0	82333	0
12/85	1028	46928	20724	12349	25176	0	105177	0
	2.3%	-3.7%	-7.2%	-28.3%	-64.0%	0.0%	-21.7%	0.0%
1/87	1141	58771	24742	10407	5350	1326	100596	0
1/86	1124	61619	27352	15106	141	-2	104296	0
	1.5%	-4.6%	-9.5%	-31.5%	3694.3%	66400.0%	-3.5%	0.0%
2/87	980	55560	24111	10707	-4642	1326	87062	0
2/86	977	54379	23944	14283	-4586	20	88040	0
	0.3%	2.2%	0.7%	-25.0%	-1.2%	6530.0%	-1.1%	0.0%
3/87	823	45313	19450	8730	-4503	0	68990	0
3/86	814	47601	20648	11685	-11084	94	68944	0
	1.1%	-4.8%	-5.8%	-25.3%	59.4%	-100.0%	0.1%	0.0%
4/87	735	31852	13767	7141	-6521	3467	49706	0
4/86	455	27596	11330	7315	-6601	3327	42967	0
	61.5%	15.4%	21.5%	-2.4%	1.2%	4.2%	15.7%	0.0%
5/87	202	17214	7473	5287	-3570	9750	36154	0
5/86	196	15754	6395	4987	-5429	10102	31809	0
	3.1%	9.3%	16.9%	6.0%	34.2%	-3.5%	13.7%	0.0%
6/87	30	9269	4097	4306	-2226	9510	24956	0
6/86	29	9561	3798	4446	-1860	9280	25225	0
	3.4%	-3.1%	7.9%	-3.1%	-19.7%	2.5%	-1.1%	0.0%
7/87	5	4304	2001	3260	131	9617	19313	0
7/86	5	7387	3166	3363	-4	9245	23157	0
	0.0%	-41.7%	-36.8%	-3.1%	3375.0%	4.0%	-16.6%	0.0%
8/87	11	4055	1849	2968	617	8862	18351	0
8/86	11	6697	3007	3440	715	9190	23057	0
	0.0%	-39.5%	-38.5%	-13.9%	-13.7%	-3.6%	-20.4%	0.0%
SUMMER TOTAL	1404	87861	38853	38606	-28	57418	222710	0
	1117	87622	36898	37975	-5044	57809	215260	0
	25.7%	0.3%	5.3%	1.7%	99.4%	-0.7%	3.5%	0.0%
WINTER TOTAL	4686	231731	99009	46963	15457	6510	399470	0
	4629	231335	101623	62123	21523	2537	419341	0
	1.2%	0.2%	-2.8%	-24.4%	-28.2%	156.6%	-4.7%	0.0%
YEAR TOTAL	6090	319592	137862	85569	15429	63928	622360	0
	5746	318957	138721	100098	16479	60346	634601	0
	6.0%	0.2%	-0.6%	-14.5%	-6.4%	5.9%	-1.9%	0.0%

NOTE: (1) WINTER TOTAL IS A SUM OF THE VALUES IN NOVEMBER, DECEMBER, JANUARY, FEBRUARY, AND MARCH

(2) 999.9% REPRESENTS AN INFINITE PERCENTAGE CHANGE RESULTING FROM AN INCREASE FROM A ZERO VALUE TO SOME NON-ZERO VALUE AND THUS A DIVISION BY ZERO.

(3) A POSITIVE DEFICIENCY INDICATES SHORTAGE, A NEGATIVE DEFICIENCY INDICATES SURPLUS.

FIG 9. PROJECTED REQUIREMENTS OF NATURAL GAS BY SECTOR: EIGHT MAJOR COMPANIES (SEPT 1986 - AUG 1987)



SOURCE: PUCO, DIVISION OF FORECASTING AND SITING.

TABLE 14 COMPARISON BETWEEN ONE YEAR OF ACTUAL AND FORECAST SUPPLY FOR EIGHT MAJOR OHIO GAS UTILITIES BY SOURCE (MMCF)

COMPARISON BETWEEN 1 YEAR OF ACTUAL AND FORECAST SUPPLY (IN MMCF) FOR 8 MAJOR OHIO GAS UTILITIES BY SOURCE

MO/YR	COLUMBIA GAS	CONSOLID-ATED GAS	LAWREN-CEBURG	MICH. MISC.	PANHANDLE EAST	TENN. GAS	TEXAS EASTERN	TEXAS GAS	EMERG GAS	OHIO PRODUCT	SNG	STORAGE/ PROPANE	OTHER	TOTAL SUPPLIES
9/86	5179	8903	90	19	3817	1	352	9	0	5859	0	165	6030	30424
9/85	5597	6768	91	74	731	3001	442	9	0	6440	1012	164	3660	27989
	-7.5%	31.5%	-1.1%	-74.3%	422.2%	-100.0%	-20.4%	0.0%	0.0%	-9.0%	-100.0%	0.6%	64.8%	8.7%
10/86	12383	14830	93	30	4140	1	362	15	0	5929	0	170	5853	43806
10/85	10347	11932	96	35	2035	2081	332	13	0	7199	0	187	6799	41056
	19.7%	24.3%	-3.1%	-14.3%	103.4%	-100.0%	9.0%	15.4%	0.0%	-17.6%	0.0%	-9.1%	-13.9%	6.7%
11/86	23226	13732	90	40	4287	0	357	26	0	5213	0	5685	8013	60669
11/85	20813	10570	91	94	5138	2	399	21	0	5050	498	4377	5831	52884
	11.6%	29.9%	-1.1%	-57.4%	-16.6%	-100.0%	-10.5%	23.8%	0.0%	3.2%	-100.0%	29.9%	37.4%	14.7%
12/86	38386	8691	93	50	5266	0	451	46	0	5474	0	14792	9084	82333
12/85	50802	16057	95	58	5859	0	593	54	0	4797	640	18342	7880	105177
	-24.4%	-45.9%	-2.1%	-13.8%	-10.1%	0.0%	-23.9%	-14.8%	0.0%	14.1%	-100.0%	-19.4%	15.3%	-21.7%
1/87	48717	12739	93	72	5445	0	517	50	0	5316	0	17638	10009	100596
1/86	50288	16945	95	49	5566	550	627	50	0	5519	0	15362	9245	104296
	-3.1%	-24.8%	-2.1%	46.9%	-2.2%	-100.0%	-17.5%	0.0%	0.0%	-3.7%	0.0%	14.8%	8.3%	-3.5%
2/87	41545	12265	84	47	2612	3079	508	45	0	4979	0	12767	9131	87082
2/86	38421	13774	85	96	2696	5239	498	37	0	4425	0	11226	11543	88040
	8.1%	-11.0%	-1.2%	-50.2%	-3.1%	-41.2%	2.0%	21.6%	0.0%	12.5%	0.0%	13.7%	-20.9%	-1.1%
3/87	31831	5616	93	48	6305	3408	375	37	0	4978	0	9149	7150	68990
3/86	25664	9181	98	154	2343	6265	294	29	0	4703	0	7563	12650	68944
	24.0%	-38.8%	-5.1%	-68.8%	169.1%	-45.6%	27.6%	27.6%	0.0%	5.8%	0.0%	21.0%	-43.5%	0.1%
4/87	14256	4020	90	37	5817	3299	407	22	0	5011	0	3663	13084	49706
4/86	14132	5587	92	80	1793	4725	227	17	0	5048	0	3393	7873	42967
	0.9%	-28.0%	-2.2%	-53.8%	224.4%	-30.2%	79.3%	29.4%	0.0%	-0.7%	0.0%	8.0%	66.2%	15.7%
5/87	8653	6872	93	14	5778	3408	128	13	0	4960	0	230	6005	36154
5/86	5117	3214	94	10	3925	6091	134	232	0	6321	0	369	6302	31809
	69.1%	113.8%	-1.1%	40.0%	47.2%	-44.0%	-4.5%	-94.4%	0.0%	-21.5%	0.0%	-37.7%	-4.7%	13.7%
6/87	3650	4173	90	9	178	3299	97	8	0	4767	0	165	8520	24956
6/86	2722	555	88	6	495	5353	215	39	0	5684	0	283	9785	25225
	34.1%	651.9%	2.3%	50.0%	-64.0%	-38.4%	-54.9%	-79.5%	0.0%	-16.1%	0.0%	-41.7%	-12.9%	-1.1%
7/87	987	2837	93	11	162	3408	294	7	0	4591	0	170	6753	19313
7/86	568	4033	93	13	401	710	188	6	0	6463	0	172	10510	23157
	73.8%	-29.7%	0.0%	-15.4%	-59.6%	380.0%	56.4%	16.7%	0.0%	-29.0%	0.0%	-1.2%	-35.7%	-16.6%
8/87	763	2150	93	9	162	3408	228	0	0	4582	0	165	6791	18351
8/86	2588	5600	97	17	568	0	240	7	0	4894	0	159	8887	23057
	-70.5%	-61.6%	-4.1%	-47.1%	-71.5%	999.9%	-5.0%	-100.0%	0.0%	-6.4%	0.0%	3.8%	-23.6%	-20.4%
SUMMER TOTAL	45871	43785	642	129	20054	16824	1868	74	0	35699	0	4728	53034	222710
	41071	37669	651	235	9948	21961	1778	323	0	42049	1012	4727	53816	215240
	11.7%	16.2%	-1.4%	-45.1%	101.6%	-23.4%	5.1%	-77.1%	0.0%	-15.1%	-100.0%	0.0%	-1.4%	3.5%
WINTER TOTAL	183705	53043	453	277	23915	6487	2208	204	0	25960	0	60031	43387	399670
	185988	66527	464	451	21602	12056	2411	191	0	24494	1138	56870	47149	419341
	-1.2%	-20.3%	-2.4%	-38.6%	10.7%	-46.2%	-8.4%	6.8%	0.0%	6.0%	-100.0%	5.6%	-8.0%	-4.7%
YEAR TOTAL	229576	96828	1095	406	43969	23311	4076	278	0	61659	0	64759	96423	622380
	227059	104216	1115	686	31550	34017	4189	514	0	66543	2150	61597	100965	634601
	1.1%	-7.1%	-1.8%	-40.8%	39.4%	-31.5%	-2.7%	-45.9%	0.0%	-7.3%	-100.0%	5.1%	-4.5%	-1.9%

NOTE: (1) WINTER TOTAL IS A SUM OF THE VALUES IN NOVEMBER, DECEMBER, JANUARY, FEBRUARY, AND MARCH.

(2) 999.9% REPRESENTS AN INFINITE PERCENTAGE CHANGE RESULTING FROM AN INCREASE FROM A ZERO VALUE TO SOME NON-ZERO VALUE AND THUS A DIVISION BY ZERO.

Table 15-A The Growth of Non-tariff Industrial Sales
in Ohio (1978-1985)
(TBTU)

Year	Industrial Tariff Sales	Industrial Non-tariff Sales	Total Industrial Sales	Share of Non-tariff Sales in Total Industrial Requirements
1978	334.79	29.18	363.97	8.02%
1979	354.92	30.48	385.40	7.91%
1980	324.58	31.71	356.29	8.90%
1981	311.38	38.10	349.48	10.90%
1982	238.54	33.78	272.32	12.40%
1983	191.70	49.11	240.81	20.39%
1984	167.60	88.11	255.71	34.46%
1985	121.00	130.00	251.00	51.79%

Source: PUCO, Division of Forecasting and Siting.

Table 15-B: Independent Forecast of Annual Natural Gas End Use Requirements, Calendar Year 1987 (BILLION CUBIC FEET)

	Actual 1985	Lower 95% Confidence Limit	Forecast 1987	Upper 95% Confidence Limit
Residential	318	303	319	335
Commercial	140	128	135	142
Industrial Tariff Sales	121	79	83	87
Industrial Non-tariff Sales	108	150	158	166
ANR Sales to Sohio Chemical & Sohio Oil Co.	26	15	26 **	35
Other *	12	10	11	12
Total Requirements	725	670	706	742

Source: PUCO. Division of Forecasting and Siting and FERC Form No. 2.

* Other includes transportation and electric utilities sectors.

** ANR forecast values estimated due to incomplete data.

Note: Storage is not included in the total. Also note that non-tariff sales include natural gas procured under self-help programs such as SMP and FOD.

Table 16: Independent Forecasts of Gas Supply and Demand for the Eight Major Ohio Gas Utilities November 1986 - March 1987 (MMCF)

	Normal Weather			10% Colder Than Normal Weather		
	Supply	Demand	Surplus (Deficiency) [1]	Supply	Demand	Surplus (Deficiency) [1]
Cincinnati Gas & Electric	48,585	48,700	(115)	52,879	53,015	(136)
Columbia Gas	138,714	137,500	1,214	148,868	147,567	1,301
Dayton Power & Light	31,437	31,900	(463)	33,859	34,358	(499)
East Ohio Gas	164,505	158,800	5,705	174,418	168,511	5,907
National Gas	2,954	2,954	0	3,125	3,125	0
Ohio Gas	8,126	8,126	0	8,528	8,528	0
River Gas	3,184	3,184	0	3,334	3,334	0
West Ohio Gas	9,096	9,096	0	9,867	9,867	0
Total	406,601	400,260	6,341	434,878	428,305	6,573

[1] Note: Numbers within parentheses indicate deficiency.

Source: October 1986 ODOE Form SG-2 of reporting utilities and PUCO, Division of Forecasting & Siting.

Table 17: Independent Forecasts of Gas Supply
and Demand for Cincinnati Gas and Electric Company
November 1986 - March 1987
(MMCF)

	Normal Weather				10% Colder Than Normal Weather			
	Supply	HDD[2]	Demand	Surplus (Deficiency)	Supply	HDD[2]	Demand	Surplus (Deficiency)[3]
November 1986	7,401	648	6,800	601	8,147	713	7,485	662
December 1986	10,248	967	10,900	(652)	11,123	1,064	11,831	(708)
January 1987	12,101	1,119	13,000	(899)	13,306	1,231	14,295	(989)
February 1987	10,333	921	10,100	233	11,172	1,013	10,920	252
March 1987	8,502	719	7,900	602	9,131	791	8,484	647
Total[1]	48,585		48,700	(115)	52,879		53,015	(136)

Notes: Totals may not add due to independent rounding.
HDD - Heating Degree-Days.
Numbers within parentheses indicate deficiency. Projected deficiency levels can be met with gas in storage.

Source: Cincinnati Gas & Electric's October ODOE Form SG-2 and PUCO, Division of Forecasting & Siting.

Table 18: Independent Forecasts of Gas Supply
and Demand for Columbia Gas of Ohio
November 1986 - March 1987
(MMCF)

	Normal Weather				10% Colder Than Normal Weather			
	Supply	HDD[2]	Demand	Surplus (Deficiency)	Supply	HDD[2]	Demand	Surplus (Deficiency)[3]
November 1986	19,163	589	19,000	163	20,168	648	19,996	172
December 1986	29,198	930	29,000	198	31,066	1,023	30,855	211
January 1987	34,941	1,192	34,500	441	37,548	1,311	37,074	474
February 1987	30,549	1,146	31,000	(451)	33,156	1,261	33,645	(489)
March 1987	24,863	908	24,000	863	26,930	999	25,995	935
Total[1]	138,714		137,500	1,214	148,868		147,567	1,301

Notes: Totals may not add due to independent rounding.
HDD - Heating Degree-Days.
Numbers within parentheses indicate deficiency. Projected deficiency levels can be met with gas in storage.

Source: Columbia Gas of Ohio's October ODOE Form SG-2 and PUCO, Division of Forecasting & Siting.

Table 19: Independent Forecasts of Gas Supply and Demand for Dayton Power & Light Company November 1986 - March 1987 (MMCF)

	Normal Weather				10% Colder Than Normal Weather			
	Supply	HDD [2]	Demand	Surplus (Deficiency)	Supply	HDD [2]	Demand	Surplus (Deficiency) [3]
November 1986	4,133	475	3,900	233	4,444	523	4,193	251
December 1986	5,911	850	6,000	(89)	6,362	935	6,458	(96)
January 1987	7,665	1,170	8,100	(435)	8,256	1,287	8,725	(469)
February 1987	8,067	1,175	8,200	(133)	8,687	1,293	8,830	(143)
March 1987	5,661	892	5,700	(39)	6,110	981	6,152	(42)
Total [1]	31,437		31,900	(463)	33,859		34,358	(499)

Notes: Totals may not add due to independent rounding.
HDD - Heating Degree-Days.
Numbers within parentheses indicate deficiency. Projected deficiency levels can be met with gas in storage.

Source: Dayton Power & Light Company's October ODOE Form SG-2 and PUCO, Division of Forecasting & Siting.

Table 20: Independent Forecasts of Gas Supply
and Demand for East Ohio Gas Company
November 1986 - March 1987
(MMCF)

	Normal Weather				10% Colder Than Normal Weather			
	Supply	HDD[2]	Demand	Surplus (Deficiency)	Supply	HDD[2]	Demand	Surplus (Deficiency)[3]
November 1986	27,436	562	23,000	4,436	28,104	618	23,560	4,544
December 1986	33,192	970	33,300	(108)	34,796	1,067	34,909	(113)
January 1987	40,075	1,210	41,000	(925)	43,065	1,331	44,059	(994)
February 1987	34,607	1,176	34,000	607	37,130	1,294	36,479	651
March 1987	29,195	968	27,500	1,695	31,323	1,065	29,504	1,819
Total[1]	164,505		158,800	5,705	174,418		168,511	5,907

Notes: Totals may not add due to independent rounding.
HDD - Heating Degree-Days.
Numbers within parentheses indicate deficiency. Projected deficiency levels can be met with gas in storage.

Source: East Ohio Gas Company's October ODOE Form SG-2 and PUCO, Division of Forecasting & Siting.

APPENDIX A

Table A-1: Allegheny Power System
Forecast of Net Energy for Load
(1000 MWH)

Month	Net Energy For Load (1985-1986)	Utility Forecast (1986-1987)	%Change (Utility Forecast vs. Actual	PUCO Forecast (1986-1987)	%Change (PUCO Forecast vs. Actual)
November	2,590	2,746	6.02	2,668	3.01
December	3,113	3,058	-1.77	3,019	-3.02
January	3,216	3,296	2.49	3,329	3.51
February	2,863	2,943	2.79	2,976	3.95
March	2,920	3,044	4.25	3,010	3.08
April	2,624	2,713	3.39	2,594	-1.14
May	2,599	2,661	2.39	2,610	0.42
June	2,620	2,656	1.37	2,724	3.97
July	2,805	2,769	-1.28	2,861	2.00
August	2,683	2,829	5.44	2,738	2.05
September	2,547	2,648	3.97	2,674	4.99
October	*	2,741	*	2,790	*

* = Actual figures not available.
Source: Form EIA-119M and PUCO, Division of Forecasting and Siting.

Table A-2: American Electric Power
Forecast of Net Energy for Load
(1000 MWH)

Month	Net Energy For Load (1985-1986)	Utility Forecast (1986-1987)	%Change (Utility Forecast vs. Actual	PUCO Forecast (1986-1987)	%Change (PUCO Forecast vs. Actual)
November	6,791	7,274	7.11	6,994	2.99
December	8,284	8,188	-1.16	7,987	-3.59
January	8,413	8,921	6.04	8,387	-0.31
February	7,396	7,754	4.84	7,361	-0.47
March	7,513	7,892	5.04	7,905	5.22
April	6,755	7,030	4.07	6,951	2.90
May	6,859	6,835	-0.35	6,790	-1.01
June	7,064	6,951	-1.60	7,022	-0.59
July	7,716	7,318	-5.16	7,870	2.00
August	7,098	7,563	6.55	7,417	4.49
September	6,614	6,913	4.52	6,752	2.09
October	*	7,124	*	6,755	*

* = Actual figures not available.
Source: Form EIA-119M and PUCO, Division of Forecasting and Siting.

Table A-3: Cincinnati Gas and Electric
Forecast of Net Energy for Load
(1000 MWH)

Month	Net Energy For Load (1985-1986)	Utility Forecast (1986-1987)	%Change (Utility Forecast vs. Actual	PUCO Forecast (1986-1987)	%Change (PUCO Forecast vs. Actual)
November	1,284	1,327	3.35	1,355	5.53
December	1,591	1,483	-6.79	1,503	-5.53
January	1,588	1,568	-1.26	1,635	2.96
February	1,385	1,381	-0.29	1,433	3.47
March	1,401	1,416	1.07	1,373	-2.00
April	1,265	1,238	-2.13	1,289	1.90
May	1,333	1,302	-2.33	1,391	4.35
June	1,484	1,418	-4.45	1,437	-3.17
July	1,752	1,584	-9.59	1,716	-2.05
August	1,527	1,579	3.41	1,511	-1.05
September	1,386	1,335	-3.68	1,344	-3.03
October	*	1,279	*	1,449	*

* = Actual figures not available.
Source: Form EIA-119M and PUCO, Division of Forecasting and Siting.

Table A-4: Cleveland Electric Illuminating Company
Forecast of Net Energy for Load
(1000 MWH)

Month	Net Energy For Load (1985-1986)	Utility Forecast (1986-1987)	%Change (Utility Forecast vs. Actual	PUCO Forecast (1986-1987)	%Change (PUCO Forecast vs. Actual)
November	1,526	1,531	0.33	1,564	2.49
December	1,704	1,602	-5.99	1,680	-1.41
January	1,735	1,745	0.58	1,762	1.56
February	1,604	1,728	7.73	1,625	1.31
March	1,652	1,663	0.67	1,696	2.66
April	1,518	1,559	2.70	1,578	3.95
May	1,514	1,563	3.24	1,583	4.56
June	1,537	1,644	6.96	1,598	3.97
July	1,729	1,697	-1.85	1,763	1.97
August	1,671	1,697	1.56	1,637	-2.03
September	*	1,595	*	1,839	*
October	*	1,541	*	1,532	*

* = Actual figures not available.
Source: Form EIA-119M and PUCO, Division of Forecasting and Siting.

Table A-5: Dayton Power and Light
Forecast of Net Energy for Load
(1000 MWH)

Month	Net Energy For Load (1985-1986)	Utility Forecast (1986-1987)	%Change (Utility Forecast vs. Actual	PUCO Forecast (1986-1987)	%Change (PUCO Forecast vs. Actual)
November	908	955	5.18	950	4.63
December	1,115	1,037	-7.00	1,075	-3.59
January	1,113	1,211	8.81	1,150	3.32
February	999	1,043	4.40	1,030	3.10
March	999	1,045	4.60	1,026	2.70
April	891	911	2.24	904	1.46
May	906	904	-0.22	918	1.32
June	968	960	-0.83	930	-3.93
July	1,122	1,040	-7.31	1,138	1.43
August	995	1,045	5.03	985	-1.01
September	*	918	*	935	*
October	*	951	*	945	*

* = Actual figures not available.
Source: Form EIA-119M and PUCO, Division of Forecasting and Siting.

Table A-6: Ohio Edison Company
Forecast of Net Energy for Load
(1000 MWH)

Month	Net Energy For Load (1985-1986)	Utility Forecast (1986-1987)	%Change (Utility Forecast vs. Actual	PUCO Forecast (1986-1987)	%Change (PUCO Forecast vs. Actual)
November	1,961	1,987	1.33	1,940	-1.07
December	2,196	2,104	-4.19	2,150	-2.09
January	2,263	2,304	1.81	2,326	2.78
February	2,049	2,051	0.10	2,096	2.29
March	2,094	2,191	4.63	2,074	-0.96
April	1,922	1,959	1.93	1,896	-1.35
May	1,938	1,951	0.67	1,923	-0.77
June	1,998	1,983	-0.75	1,957	-2.05
July	2,176	2,091	-3.91	2,205	1.33
August	2,033	2,139	5.21	2,081	2.36
September	1,964	1,976	0.61	1,924	-2.04
October	*	2,061	*	2,117	*

* = Actual figures not available.
Source: Form EIA-119M and PUCO, Division of Forecasting and Siting.

Table A-7: Ohio Valley Electric Corporation
Forecast of Net Energy for Load
(1000 MWH)

Month	Net Energy For Load (1985-1986)	Utility Forecast (1986-1987)	%Change (Utility Forecast vs. Actual)
November	1,453	1,433	-1.38
December	1,556	1,498	-3.73
January	1,485	1,473	-0.81
February	1,374	1,325	-3.57
March	1,443	1,462	1.32
April	1,364	1,458	6.89
May	1,460	1,427	-2.26
June	1,402	1,429	1.93
July	1,418	1,515	6.84
August	1,464	1,515	3.48
September	1,368	1,373	0.37
October	*	1,460	*

* = Actual figures not available.
Source: Form EIA-119M and PUCO, Division of Forecasting and Siting.
Note: Net Energy For Load is defined as the Total Expected Generation.

Table A-8: Toledo Edison Company
Forecast of Net Energy for Load
(1000 MWH)

Month	Net Energy For Load (1985-1986)	Utility Forecast (1986-1987)	%Change (Utility Forecast vs. Actual	PUCO Forecast (1986-1987)	%Change (PUCO Forecast vs. Actual)
November	637	672	5.49	650	2.04
December	752	731	-2.79	711	-5.45
January	740	759	2.57	715	-3.38
February	672	709	5.51	721	7.29
March	683	706	3.37	682	-0.15
April	618	651	5.34	622	0.65
May	637	647	1.57	653	2.51
June	650	655	0.77	665	2.31
July	732	704	-3.83	730	-0.27
August	681	709	4.11	674	-1.03
September	*	654	*	645	*
October	*	669	*	640	*

* = Actual figures not available.
Source: Form EIA-119M and PUCO, Division of Forecasting and Siting.

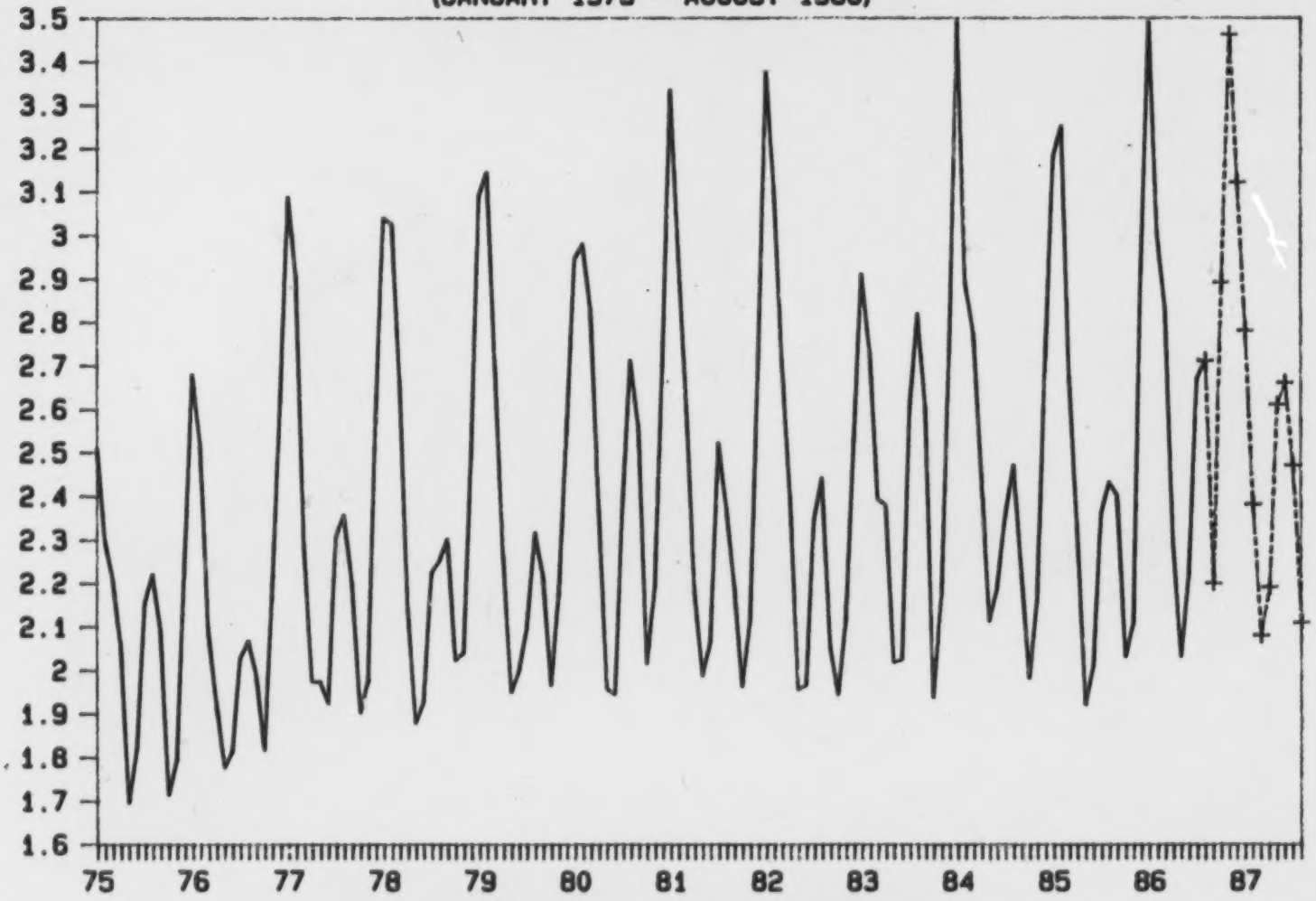
Table A-9: Independent Forecast of Ohio Electricity Demand
Residential Sector
(1000 MWH)

Month	Lower 95% Confidence Limit	PUCO Forecast (1986-87)	Upper 95% Confidence Limit	Actual (1985-1986)	Forecast Percentage Change
November	1,940	2,200	2,620	2,111	4.2
December	2,530	2,890	3,360	2,916	-0.9
January	2,970	3,460	3,850	3,485	-0.7
February	2,600	3,120	3,630	2,999	4.0
March	2,240	2,780	3,220	2,825	-1.6
April	1,970	2,380	2,790	2,288	4.0
May	1,650	2,080	2,470	2,032	2.4
June	1,710	2,190	2,620	2,220	-1.4
July	2,180	2,610	3,030	2,670	-2.2
August	2,210	2,660	3,010	2,707	-1.7
September	1,880	2,470	2,970	*	
October	1,770	2,110	2,550	*	

Note: The forecast is based upon monthly summary statistics published by the Ohio Electric Utility Institute, for the eight major investor-owned electric utilities (excluding OVEC).
Note: * indicates actual figures not available.

FIG. A-1. MONTHLY OHIO RESIDENTIAL ELECTRICITY CONSUMPTION

(JANUARY 1975 - AUGUST 1986)



SOURCE: OHIO ELECTRIC UTILITY INSTITUTE

—— ACTUAL + FORECAST

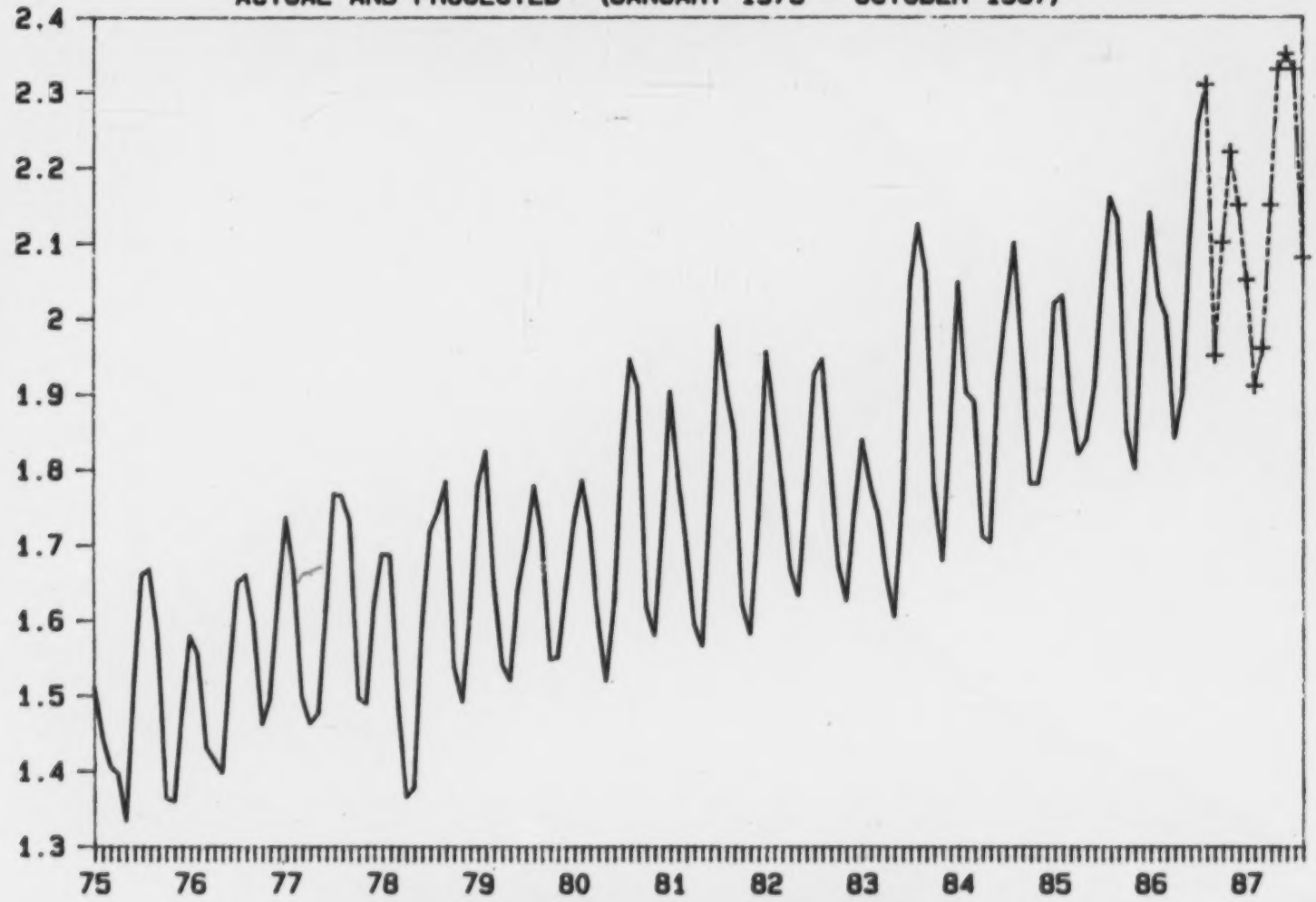
Table A-10: Independent Forecast of Ohio Electricity Demand
Commercial Sector
(1000 MWH)

Month	Lower 95% Confidence Limit	PUCO Forecast (1986-87)	Upper 95% Confidence Limit	Actual (1985-1986)	Forecast Percentage Change
November	1,780	1,950	2,120	1,798	8.5
December	1,920	2,100	2,290	2,014	4.3
January	2,070	2,220	2,460	2,140	3.7
February	1,980	2,150	2,390	2,025	6.2
March	1,910	2,050	2,340	2,003	2.3
April	1,800	1,910	2,240	1,840	3.8
May	1,800	1,960	2,260	1,902	3.0
June	1,960	2,150	2,440	2,107	2.0
July	2,100	2,330	2,600	2,261	3.1
August	2,140	2,350	2,650	2,306	1.9
September	2,050	2,330	2,600	*	
October	1,780	2,080	2,370	*	

Note: The forecast is based upon monthly summary statistics published by the Ohio Electric Utility Institute, for the eight major investor-owned electric utilities (excluding OVEC).
Note: * indicates actual figures not available.

FIG. A-2. MONTHLY OHIO COMMERCIAL ELECTRICITY CONSUMPTION

ACTUAL AND PROJECTED (JANUARY 1975 - OCTOBER 1987)



SOURCE: OHIO ELECTRIC UTILITY INSTITUTE

——— ACTUAL + FORECAST

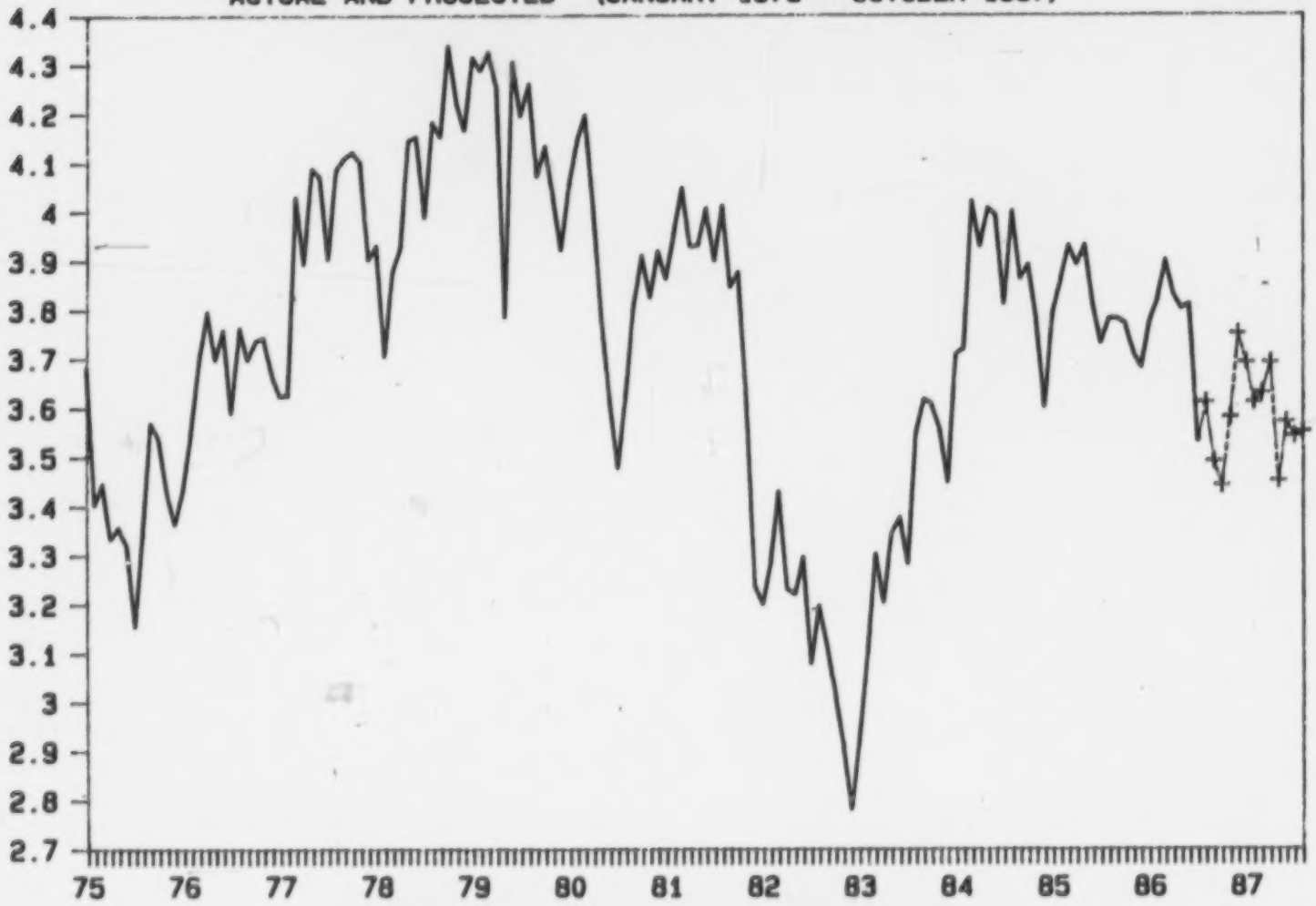
Table A-11: Independent Forecast of Ohio Electricity Demand
Industrial Sector
(1000 MWH)

Month	Lower 95% Confidence Limit	PUCO Forecast (1986-87)	Upper 95% Confidence Limit	Actual (1985-1986)	Forecast Percentage Change
November	3,080	3,490	3,910	3,707	-5.9
December	2,900	3,440	3,860	3,682	-6.6
January	3,060	3,580	4,040	3,770	-5.0
February	3,440	3,750	4,150	3,824	-1.9
March	3,360	3,690	4,230	3,901	-5.4
April	3,230	3,610	4,090	3,828	-5.7
May	3,210	3,630	4,150	3,800	-4.5
June	3,360	3,690	4,180	3,808	-3.1
July	3,050	3,450	4,040	3,530	-2.3
August	3,040	3,570	4,100	3,611	-1.1
September	2,650	3,540	4,420	*	
October	2,610	3,550	4,480	*	

Note: The forecast is based upon monthly summary statistics published by the Ohio Electric Utility Institute, for the eight major investor-owned electric utilities (excluding OVEC).
Note: * indicates actual figures not available.

FIG. A-3. MONTHLY OHIO INDUSTRIAL ELECTRICITY CONSUMPTION

ACTUAL AND PROJECTED (JANUARY 1975 - OCTOBER 1987)



SOURCE: OHIO ELECTRIC UTILITY INSTITUTE

—— ACTUAL + FORECAST

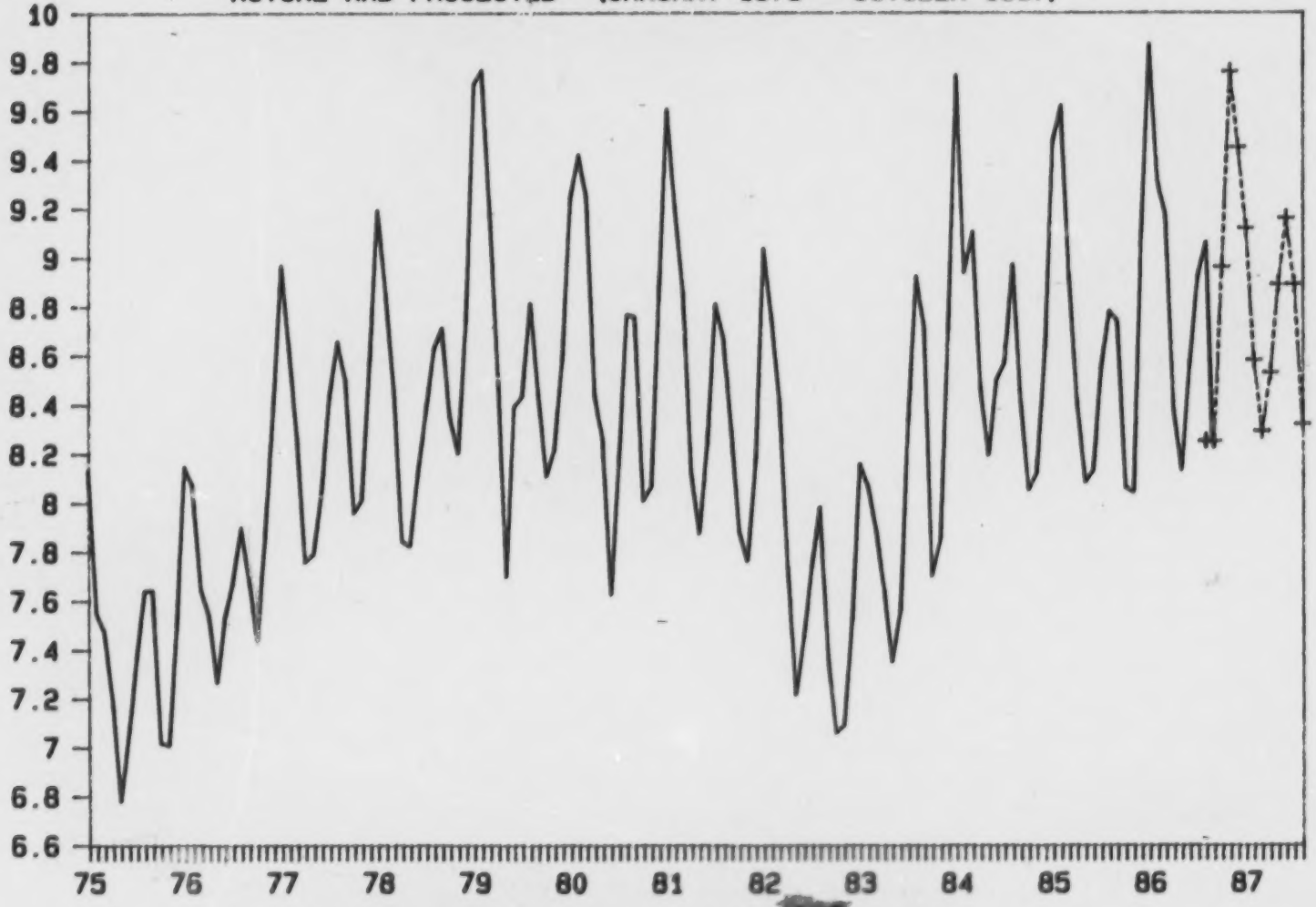
Table A-12: Independent Forecast of Ohio Electricity Demand
All Sectors
(1000 MWH)

Month	Lower 95% Confidence Limit	PUCO Forecast (1986-87)	Upper 95% Confidence Limit	Actual (1985-1986)	Forecast Percentage Change
November	7,450	8,250	9,060	8,041	2.6
December	8,030	8,960	9,890	9,091	-1.4
January	8,720	9,760	10,710	9,870	-1.1
February	8,310	9,450	10,590	9,306	1.5
March	8,160	9,120	9,920	9,165	-0.5
April	7,360	8,580	9,400	8,378	2.4
May	7,090	8,290	9,490	8,131	2.0
June	7,260	8,530	9,500	8,558	-0.3
July	7,740	8,890	10,030	8,916	-0.3
August	8,250	9,160	10,280	9,056	1.1
September	7,770	8,890	10,120	*	
October	7,250	8,320	9,450	*	

Note: The forecast is based upon monthly summary statistics published by the Ohio Electric Utility Institute, for the eight major investor-owned electric utilities (excluding OVEC).
Note: * indicates actual figures not available.

FIG. A-4. MONTHLY OHIO TOTAL ELECTRICITY CONSUMPTION

ACTUAL AND PROJECTED (JANUARY 1975 - OCTOBER 1987)

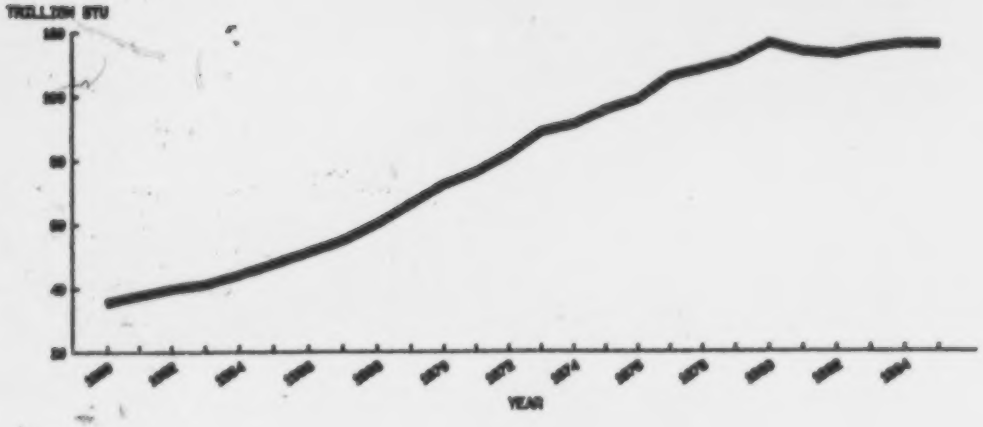


SOURCE: OHIO ELECTRIC UTILITY INSTITUTE

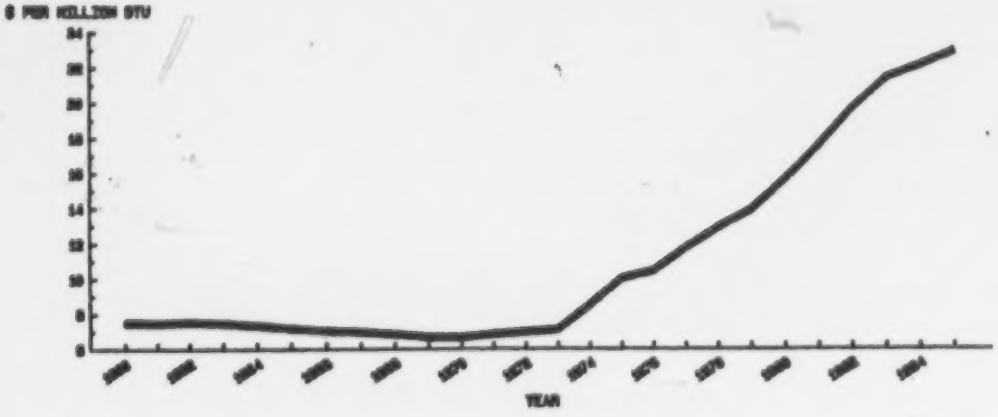
—— ACTUAL + FORECAST

FIG. A-5. ANNUAL OHIO ELECTRIC CONSUMPTION AND PRICES: RESIDENTIAL SECTOR (1960-1985)

CONSUMPTION VS. YEAR



PRICE VS. YEAR



COEFFICIENT OF TRANSFORMATION VS. PRICE

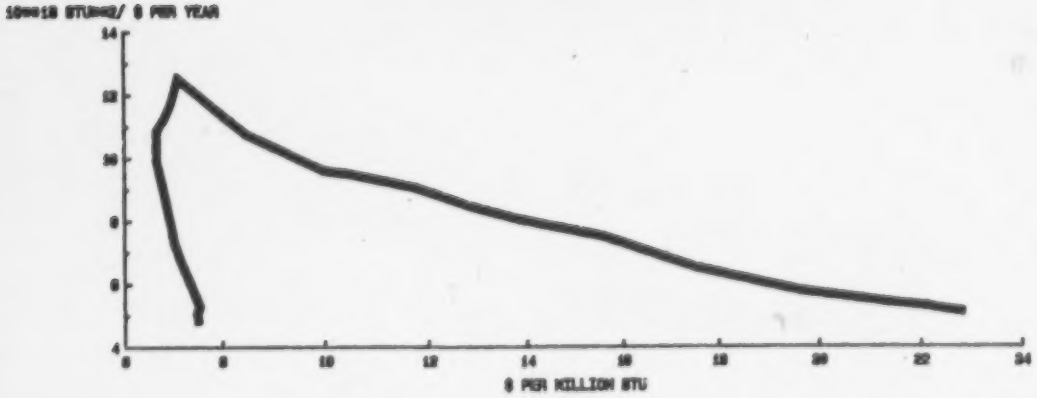
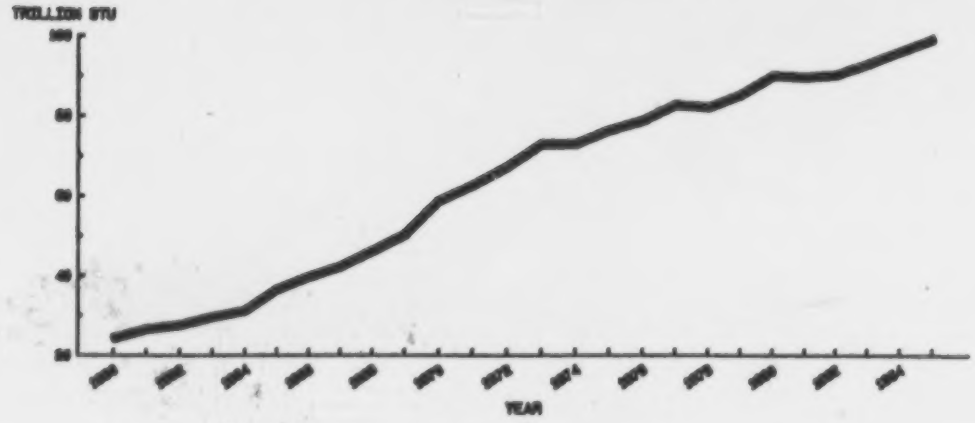
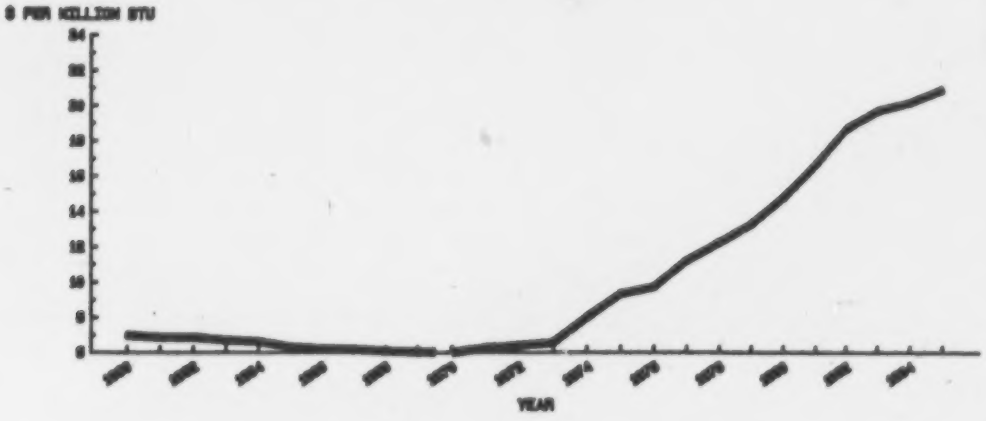


FIG. A-6. ANNUAL OHIO ELECTRIC CONSUMPTION AND PRICES: COMMERCIAL SECTOR (1960-1985)

CONSUMPTION VS. YEAR



PRICE VS. YEAR



COEFFICIENT OF TRANSFORMATION VS. PRICE

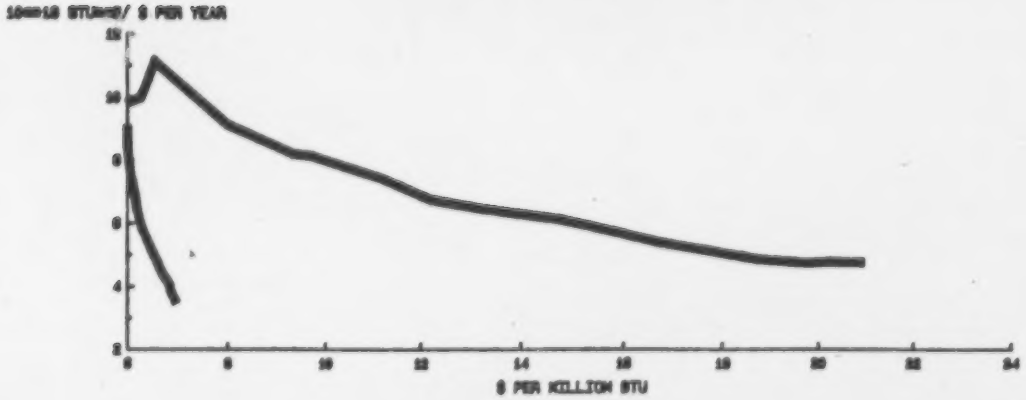
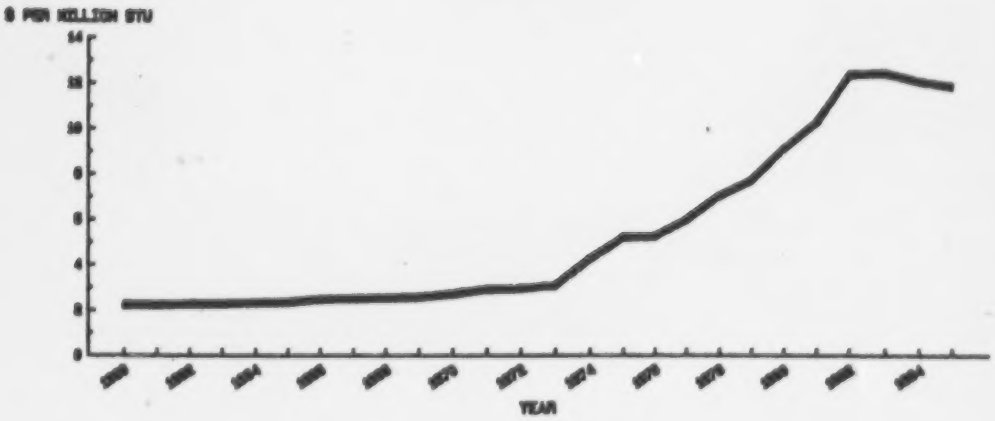


FIG. A-7. ANNUAL OHIO ELECTRIC CONSUMPTION AND PRICES: INDUSTRIAL SECTOR (1960-1985)

CONSUMPTION VS. YEAR

PRICE VS. YEAR



COEFFICIENT OF TRANSFORMATION VS. PRICE

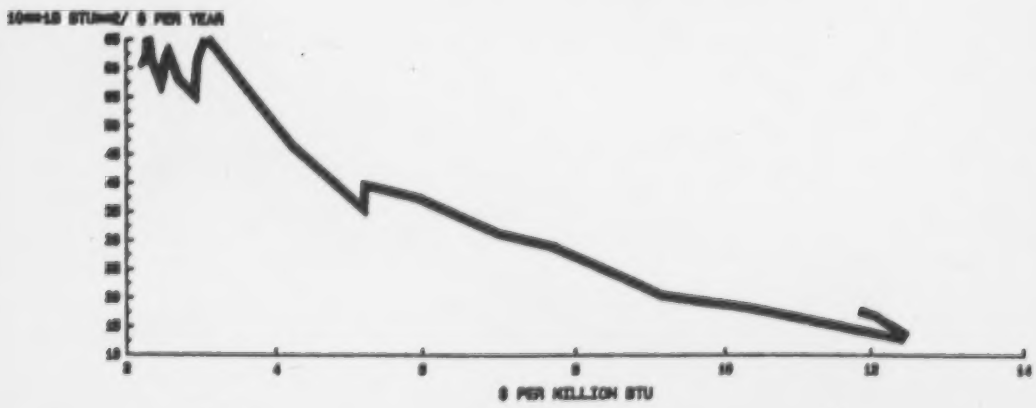
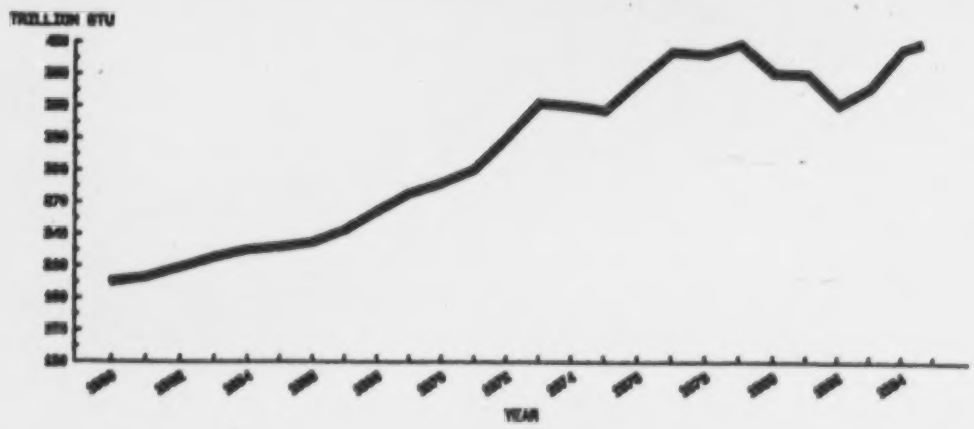
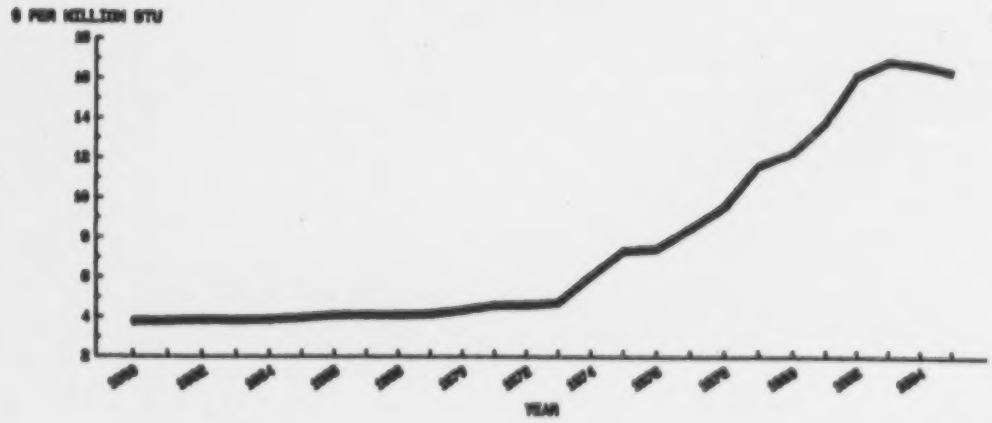


FIG. A-8. ANNUAL OHIO ELECTRIC CONSUMPTION AND PRICES: TOTAL OF ALL SECTORS (1960-1985)

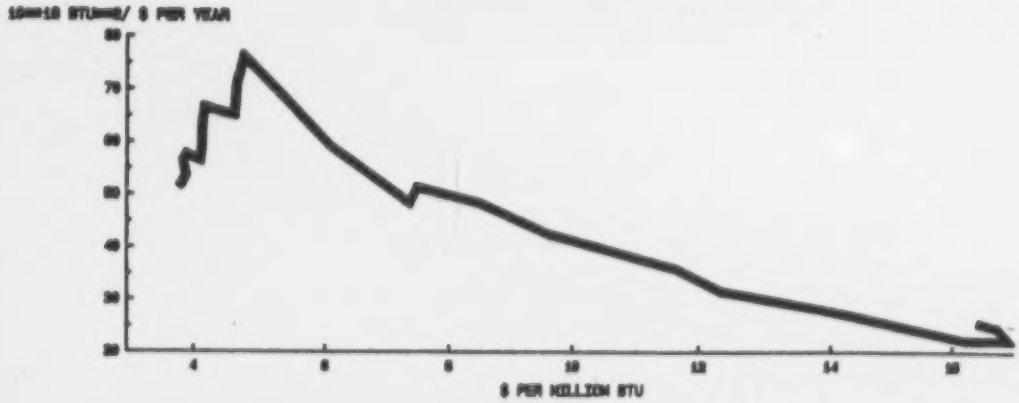
CONSUMPTION VS. YEAR



PRICE VS. YEAR



COEFFICIENT OF TRANSFORMATION VS. PRICE



APPENDIX B

Table B-1: Cincinnati Gas and Electric
Forecast of Natural Gas Requirements
(MMCF)

Month	Actual Demand (1985-1986)	Utility Forecast (1986-1987)	%Change (Utility Forecast vs. Actual)	PUCO Forecast (1986-1987)	%Change (PUCO Forecast vs. Actual)
November	6,041	7,401	22.51	6,800	12.56
December	13,263	10,248	-22.73	10,900	-17.82
January	12,518	12,101	-3.33	13,000	3.85
February	9,343	10,333	10.60	10,100	8.10
March	7,307	8,502	16.35	7,900	8.12
April	4,824	5,131	6.36	4,800	-0.50
May	2,913	3,116	6.97	3,000	2.99
June	2,096	2,279	8.73	2,200	4.96
July	2,111	2,043	-3.22	2,100	-0.52
August	2,197	2,057	-6.37	2,200	0.14
September	2,195	2,358	7.43	2,300	4.78
October	*	4,395	*	3,700	*

* Actual figures were not available.

Source: ODOE Form SG-2 and PUCO, Division of Forecasting and Siting.

Table B-2: Columbia Gas of Ohio
Forecast of Natural Gas Requirements
(MMCF)

Month	Actual Demand (1985-1986)	Utility Forecast (1986-1987)	%Change (Utility Forecast vs. Actual)	PUCO Forecast (1986-1987)	%Change (PUCO Forecas vs. Actu
November	17,725	19,163	8.11	19,000	7.19
December	37,525	29,198	-22.19	29,000	-22.72
January	36,930	34,941	-5.39	34,500	-6.58
February	31,452	30,549	-2.87	31,000	-1.44
March	24,144	24,863	2.98	24,000	-0.60
April	13,173	16,048	21.82	13,000	-1.31
May	6,918	8,462	22.32	7,400	6.97
June	5,276	4,521	-14.31	4,900	-7.13
July	4,276	4,552	6.45	4,600	7.58
August	4,832	5,115	5.86	4,500	-6.87
September	4,809	5,392	12.12	5,000	3.97
October	*	9,955	*	10,000	*

*
Actual figures were not available.

Source: ODOE Form SG-2 and PUCO, Division of Forecasting and Siting.

Table B-3: Dayton Power and Light
Forecast of Natural Gas Requirements
(MMCF)

Month	Actual Demand (1985-1986)	Utility Forecast (1986-1987)	%Change (Utility Forecast vs. Actual)	PUCO Forecast (1986-1987)	%Change (PUCO Forecas vs. Actu
November	3,705	4,133	11.55	3,900	5.26
December	7,529	5,911	-21.49	6,000	-20.31
January	9,102	7,665	-15.79	8,100	-11.01
February	8,315	8,067	-2.98	8,200	-1.38
March	6,328	5,661	-10.54	5,700	-9.92
April	4,008	4,444	10.88	4,300	7.29
May	2,414	2,203	-8.74	2,200	-8.86
June	1,665	1,201	-27.87	1,600	-3.90
July	1,027	1,112	8.28	1,100	7.11
August	1,513	1,150	-23.99	1,300	-14.08
September	1,206	1,174	-2.65	1,300	7.79
October	*	2,346	*	2,100	*

*
Actual figures were not available.

Source: ODOE Form SG-2 and PUCO, Division of Forecasting and Siting.

Table B-4: East Ohio Gas
Forecast of Natural Gas Requirements
(MMCF)

Month	Actual Demand (1985-1986)	Utility Forecast (1986-1987)	%Change (Utility Forecast vs. Actual)	PUCO Forecast (1986-1987)	%Change (PUCO Forecas vs. Actu
November	23,118	27,436	18.68	23,000	-0.51
December	42,246	33,192	-21.43	33,300	-21.18
January	41,116	40,075	-2.53	41,000	-0.28
February	35,019	34,607	-1.18	34,000	-2.91
March	28,161	29,195	3.67	27,500	-2.35
April	19,224	21,011	9.30	21,500	11.84
May	18,546	20,473	10.39	19,700	6.22
June	15,338	15,796	2.99	15,200	-0.90
July	14,917	14,640	-1.86	14,300	-4.14
August	13,539	13,739	1.85	13,600	0.45
September	15,426	16,472	6.78	15,500	0.48
October	*	22,821	*	19,100	*

*
Actual figures were not available.

Source: ODOE Form SG-2 and PUCO, Division of Forecasting and Siting.

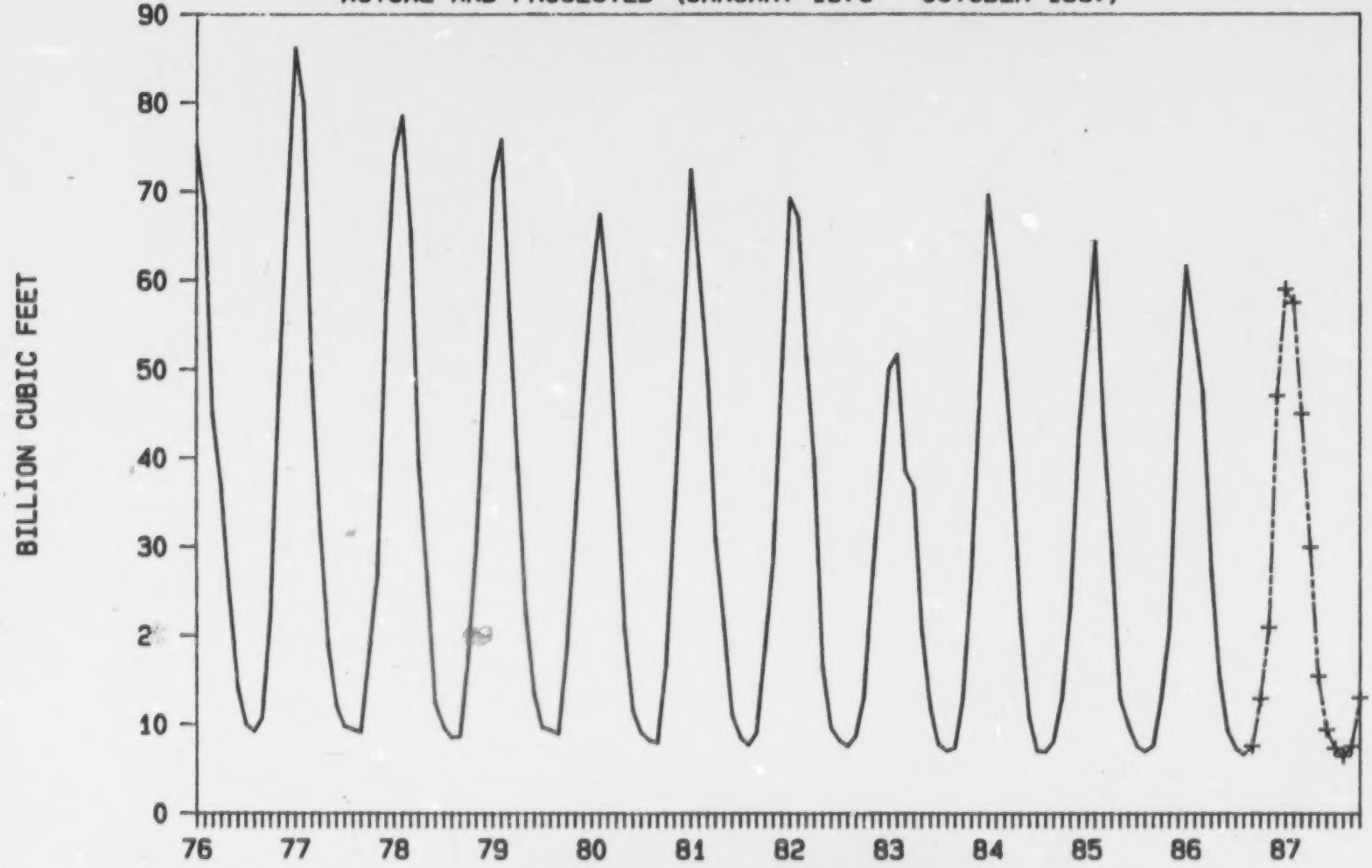
Table B-5: Independent Forecast of Ohio Natural Gas End User Requirements: Residential Sector (MMCF)

Month	Lower 95% Confidence Limit	PUCO Forecast (1986-87)	Upper 95% Confidence Limit	Actual (1985-86)	Forecast Percentage Change
November	17,625	21,000	24,375	20,808	0.9
December	38,750	47,000	55,250	46,928	0.2
January	44,000	59,000	74,000	61,619	-4.3
February	46,250	57,500	68,750	54,379	5.7
March	32,250	45,000	57,750	47,601	-5.5
April	19,125	30,000	40,875	27,596	8.7
May	8,750	15,500	22,250	15,754	-1.6
June	7,850	9,500	11,150	9,561	-0.6
July	5,900	7,400	8,900	7,387	0.2
August	5,375	6,500	7,625	6,697	-2.9
September	6,550	7,600	8,650	7,657	-0.7
October	8,975	13,100	17,225	*	

Source: ODOE Form SG-1 and PUCO, Division of Forecasting and Siting.

FIG. B-1. MONTHLY OHIO RESIDENTIAL NATURAL GAS CONSUMPTION

ACTUAL AND PROJECTED (JANUARY 1976 - OCTOBER 1987)



SOURCE: MONTHLY GAS REPORT

—— ACTUAL + PROJECTED

Table B-6: Independent Forecast of Ohio Natural Gas End User Requirements: Commercial Sector (MMCF)

Month	Lower 95% Confidence Limit	PUCO Forecast (1986-87)	Upper 95% Confidence Limit	Actual (1985-86)	Forecast Percentage Change
November	7,725	9,300	10,875	9,155	1.6
December	16,250	19,700	23,150	20,724	-4.9
January	19,650	25,800	31,950	27,352	-5.7
February	20,575	24,100	27,625	23,944	0.7
March	13,725	20,100	26,475	20,648	-2.7
April	7,700	11,600	15,500	11,330	2.4
May	3,375	6,000	8,625	6,395	-6.2
June	2,913	3,700	4,488	3,798	-2.6
July	2,388	3,100	3,813	3,166	-2.1
August	2,400	3,000	3,600	3,007	-0.2
September	2,738	3,300	3,863	3,306	-0.2
October	2,825	5,600	8,375	*	

Source: ODOE Form SG-1 and PUCO, Division of Forecasting and Siting.

FIG. B-2. MONTHLY OHIO COMMERCIAL NATURAL GAS CONSUMPTION

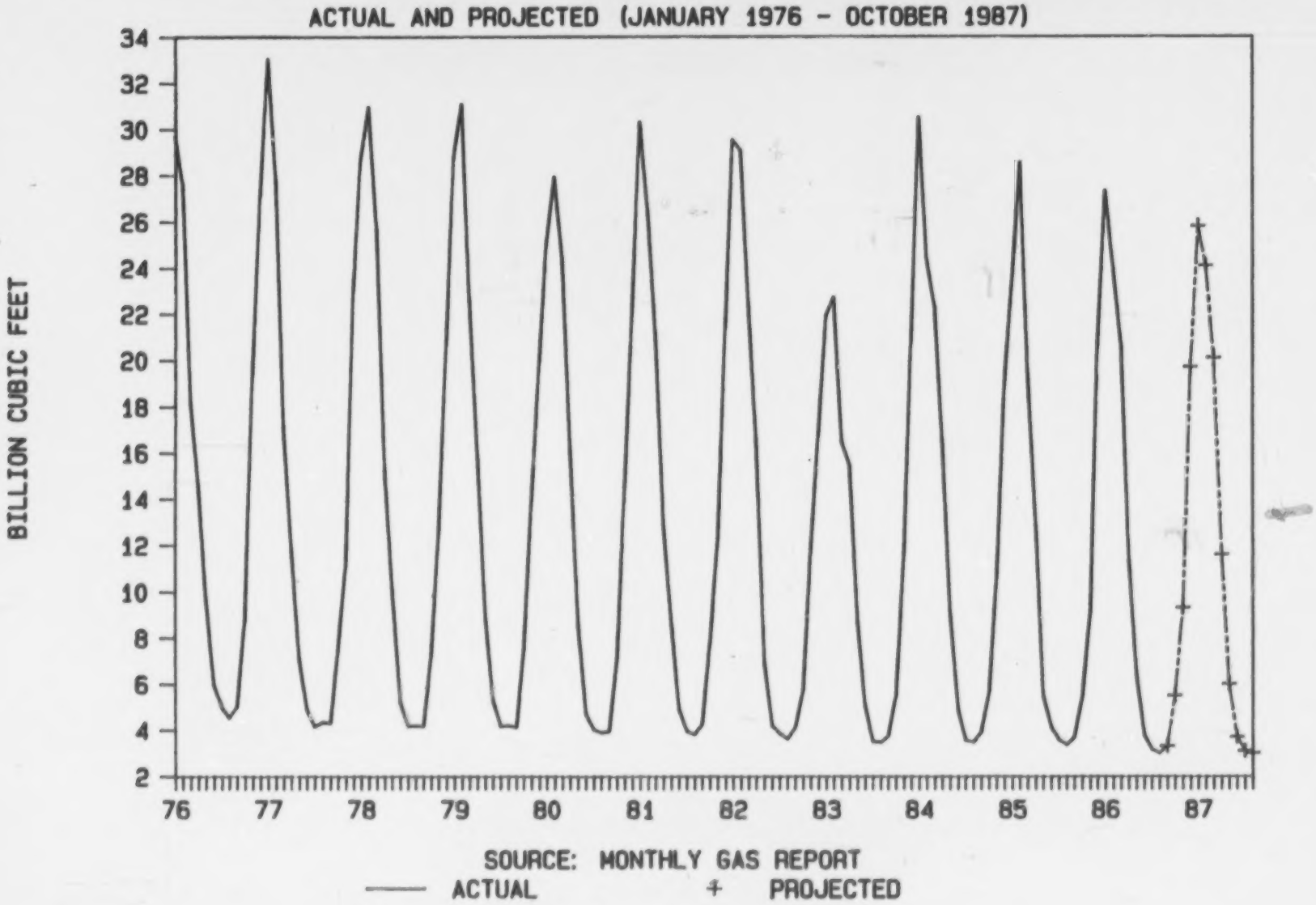


Table B-7: Independent Forecast of Ohio Natural Gas End User Requirements: Industrial Sector (MMCF)

Month	Lower 95% Confidence Limit	PUCO Forecast (1986-87)	Upper 95% Confidence Limit	Actual (1985-86)	Forecast Percentage Change
November	5,000	7,400	11,900	8,620	-14.2
December	6,700	10,100	16,475	12,349	-18.2
January	9,900	14,100	21,975	15,186	-7.2
February	8,400	12,000	18,750	14,283	-16.0
March	8,500	10,500	18,000	11,685	-10.1
April	5,800	7,400	10,400	7,315	1.2
May	2,860	4,900	8,725	4,987	-1.7
June	1,700	4,300	9,175	4,446	-3.3
July	1,000	3,000	6,750	3,363	-10.8
August	1,100	3,100	6,850	3,448	-10.1
September	1,300	3,300	7,050	3,763	-12.3
October	3,300	5,100	8,475	*	

Source: ODOE Form SG-1 and PUCO, Division of Forecasting and Siting.

FIG. B-3. MONTHLY OHIO INDUSTRIAL NATURAL GAS CONSUMPTION

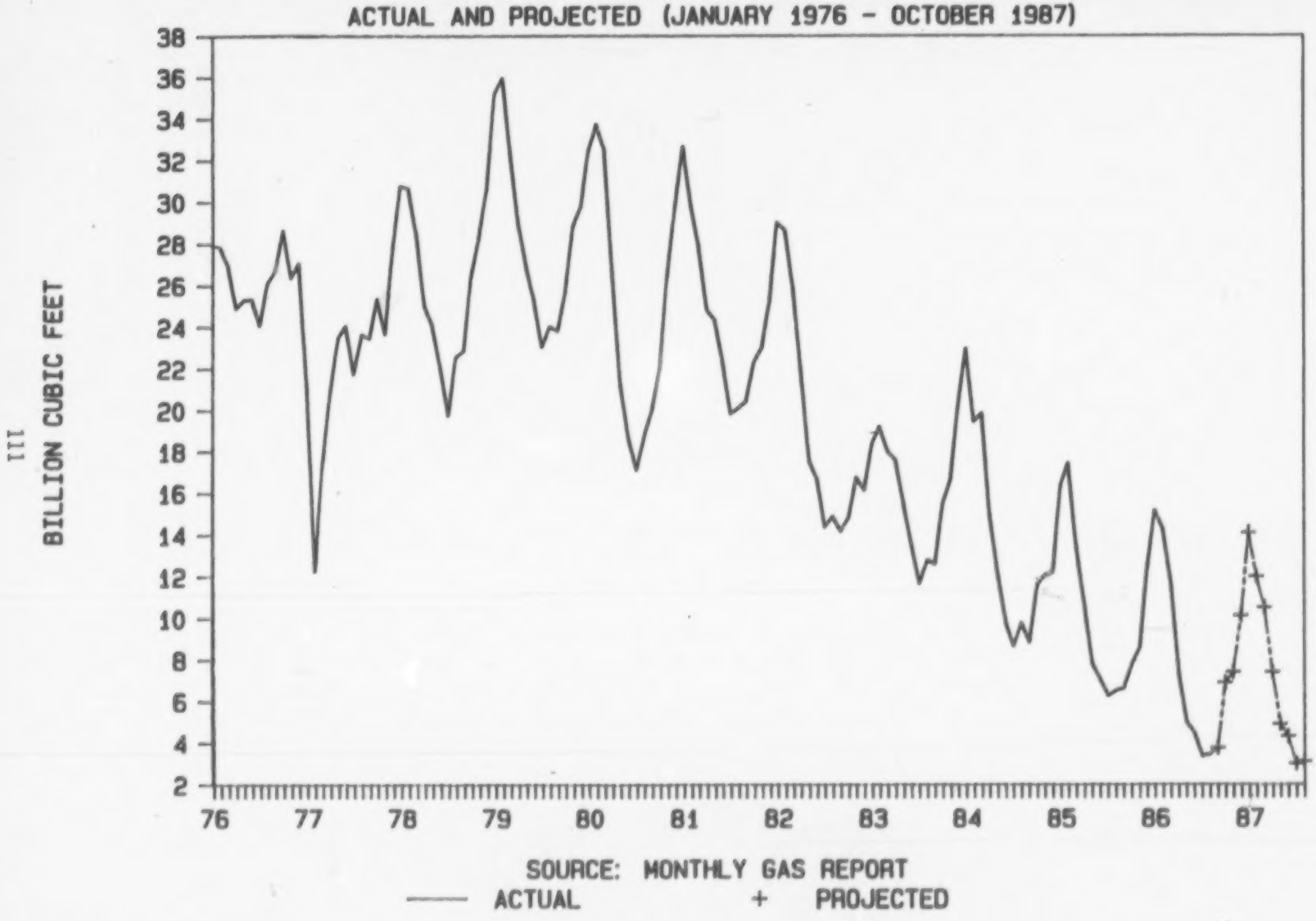


Table B-8: Independent Forecast of Ohio Natural Gas
End User Requirements: All Sectors
(MMCF)

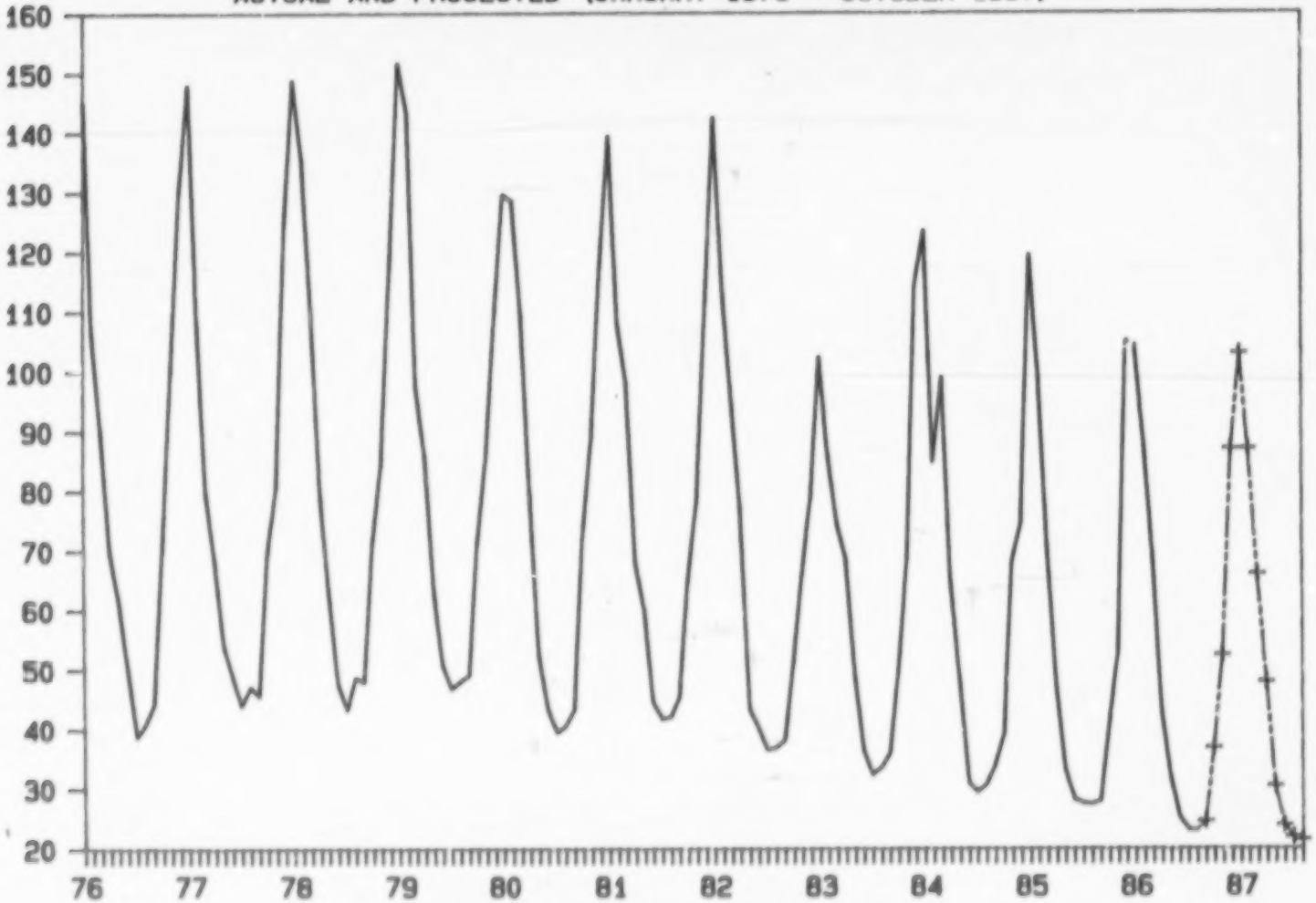
Month	Lower 95% Confidence Limit	PUCO Forecast (1986-87)	Upper 95% Confidence Limit	1 Actual (1985-86)	Forecast Percentage Change
November	40,500	52,500	64,500	52,884	-0.7
December	63,750	87,000	110,250	105,177	-17.3
January	73,000	103,000	133,000	104,296	-1.2
February	66,750	87,000	107,[illegible]	88,040	-1.2
March	43,500	66,000	88,500	68,944	-4.3
April	36,000	48,000	60,000	42,967	11.7
May	19,250	30,500	41,750	31,809	-4.1
June	17,900	23,900	29,900	25,225	-5.3
July	16,000	22,000	28,000	23,157	-5.0
August	16,250	21,500	26,750	23,057	-6.8
September	19,000	23,500	28,000	24,664	-4.7
October	24,750	33,000	41,250	*	

1
Note: The "Actual" data values include Other and Storage (In).

Source: ODOE Form SG-1 and PUCO, Division of Forecasting and Siting.

FIG. B-4. MONTHLY OHIO TOTAL NATURAL GAS CONSUMPTION

ACTUAL AND PROJECTED (JANUARY 1976 - OCTOBER 1987)



SOURCE: MONTHLY GAS REPORT

—— ACTUAL + PROJECTED

Table B-9. Projected Supply and Demand for Eight Major Ohio Natural Gas Utilities

COMPANY: CINN. GAS & ELEC.

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/86	10/86	11/86	12/86	1/87	2/87	3/87	4/87	5/87	6/87	7/87	8/87	SUMMER	WINTER	YEAR
SUPPLY	2525	3771	6630	10573	13895	10170	7001	6144	3602	1927	2089	2057	22115	48269	70384
DEMAND	2525	3771	6630	10573	13895	10170	7001	6144	3602	1927	2089	2057	22115	48269	70384
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: COLUMBIA GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/86	10/86	11/86	12/86	1/87	2/87	3/87	4/87	5/87	6/87	7/87	8/87	SUMMER	WINTER	YEAR
SUPPLY	7333	12196	19073	28985	34923	30531	24849	16037	8453	4514	0	0	48533	138361	186894
DEMAND	7333	12196	19073	28985	34923	30531	24849	16037	8453	4514	0	0	48533	138361	186894
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: DAYTON POWER & LIGHT

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/86	10/86	11/86	12/86	1/87	2/87	3/87	4/87	5/87	6/87	7/87	8/87	SUMMER	WINTER	YEAR
SUPPLY	1580	2401	4914	7133	8915	8764	6032	4554	2340	1599	1368	1150	14992	35758	50750
DEMAND	1580	2401	4914	7133	8915	8764	6032	4554	2340	1599	1368	1150	14992	35758	50750
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: EAST OHIO GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/86	10/86	11/86	12/86	1/87	2/87	3/87	4/87	5/87	6/87	7/87	8/87	SUMMER	WINTER	YEAR
SUPPLY	17294	23295	27402	32129	38355	33700	27935	20777	20515	16044	14948	14254	127127	159521	286648
DEMAND	17294	23295	27402	32129	38355	33700	27935	20777	20515	16044	14948	14254	127127	159521	286648
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table B-9. Projected Supply and Demand for Eight Major Ohio Natural Gas Utilities

COMPANY: NATIONAL GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/86	10/86	11/86	12/86	1/87	2/87	3/87	4/87	5/87	6/87	7/87	8/87	SUMMER	WINTER	YEAR
SUPPLY	840	761	283	551	795	664	465	430	134	87	278	222	2752	2758	5510
DEMAND	840	761	283	551	795	664	465	430	134	87	278	222	2752	2758	5510
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: OHIO GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/86	10/86	11/86	12/86	1/87	2/87	3/87	4/87	5/87	6/87	7/87	8/87	SUMMER	WINTER	YEAR
SUPPLY	317	540	944	1118	1268	1113	923	611	387	267	260	247	2629	5386	8015
DEMAND	317	540	944	1118	1268	1113	923	611	387	267	260	247	2629	5386	8015
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: RIVER GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/86	10/86	11/86	12/86	1/87	2/87	3/87	4/87	5/87	6/87	7/87	8/87	SUMMER	WINTER	YEAR
SUPPLY	169	259	387	492	605	540	411	263	190	141	126	129	1277	2435	3712
DEMAND	169	259	387	492	605	540	411	263	190	141	126	129	1277	2435	3712
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

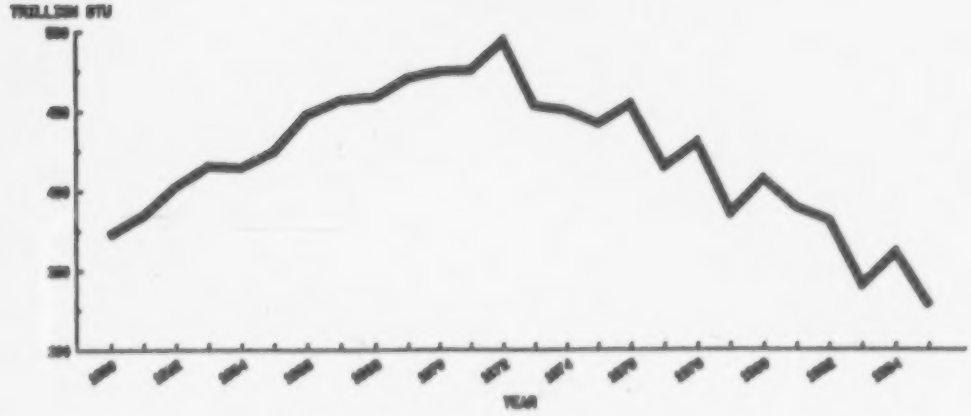
COMPANY: WEST OHIO GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

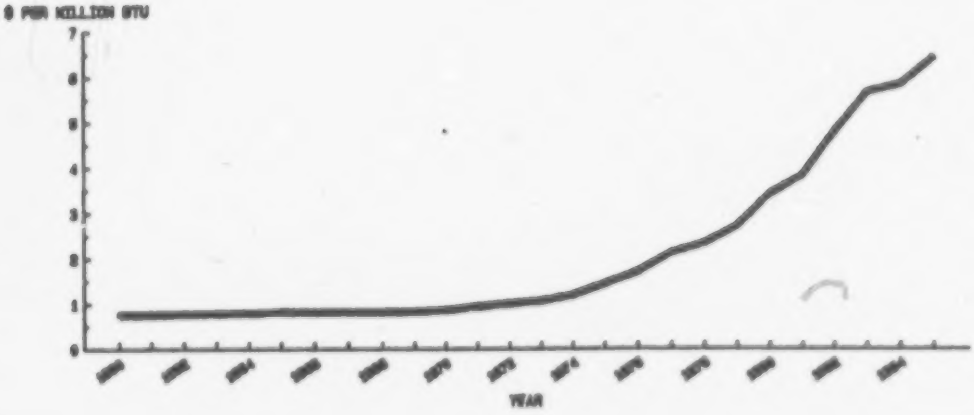
MONTH/YEAR	9/86	10/86	11/86	12/86	1/87	2/87	3/87	4/87	5/87	6/87	7/87	8/87	SUMMER	WINTER	YEAR
SUPPLY	366	583	1036	1352	1820	1600	1374	890	533	377	244	292	3285	7182	10467
DEMAND	366	583	1036	1352	1820	1600	1374	890	533	377	244	292	3285	7182	10467
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

FIG. B-5. ANNUAL OHIO NATURAL GAS CONSUMPTION AND PRICES: RESIDENTIAL SECTOR (1960-1985)

CONSUMPTION VS. YEAR



PRICE VS. YEAR



COEFFICIENT OF TRANSFORMATION VS. PRICE

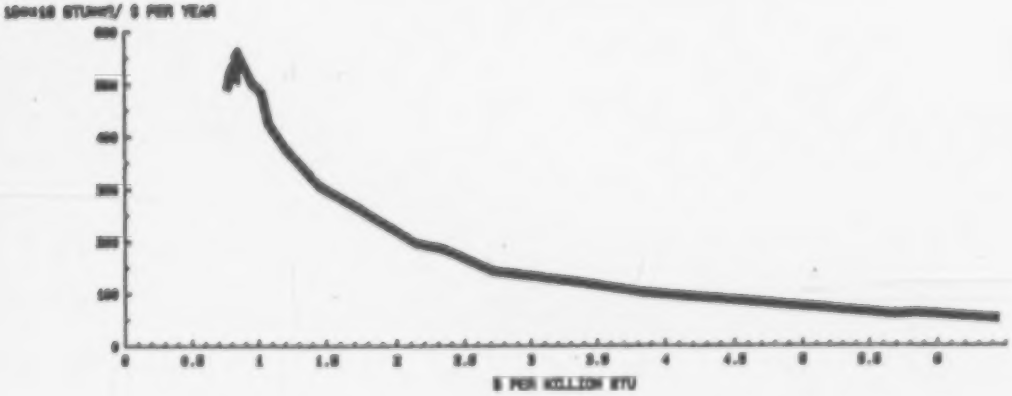
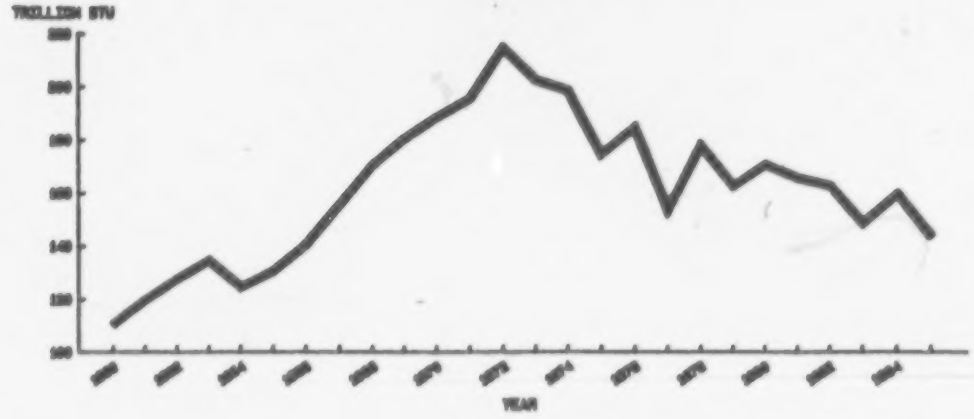
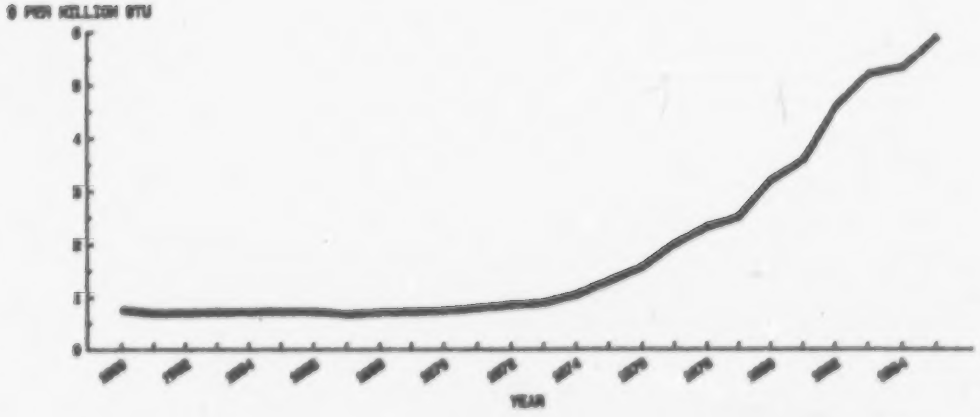


FIG. B-6. ANNUAL OHIO NATURAL GAS CONSUMPTION AND PRICES: COMMERCIAL SECTOR (1960-1985)

CONSUMPTION VS. YEAR



PRICE VS. YEAR



COEFFICIENT OF TRANSFORMATION VS. PRICE

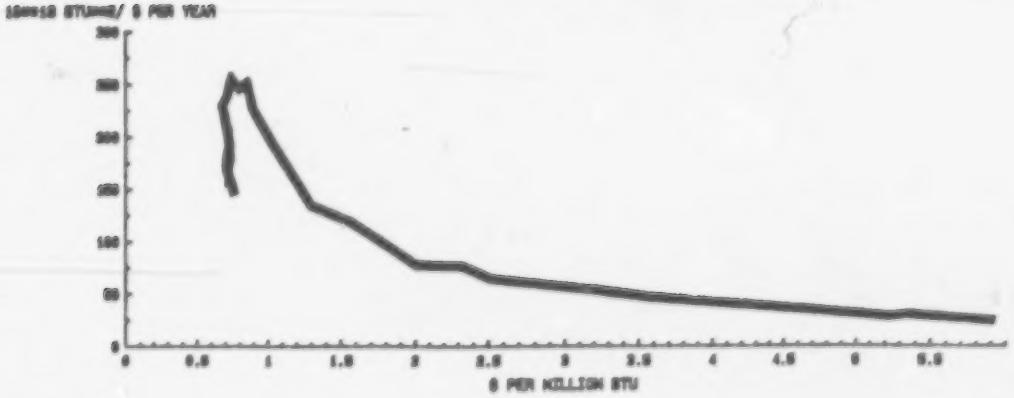
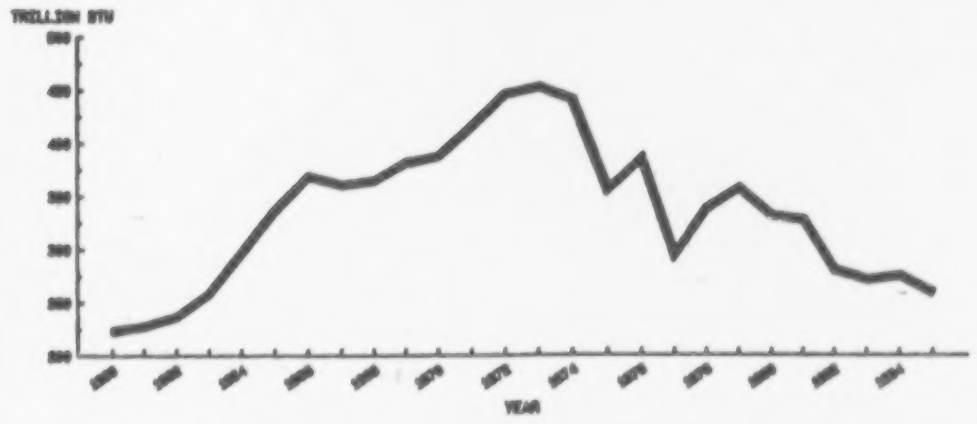
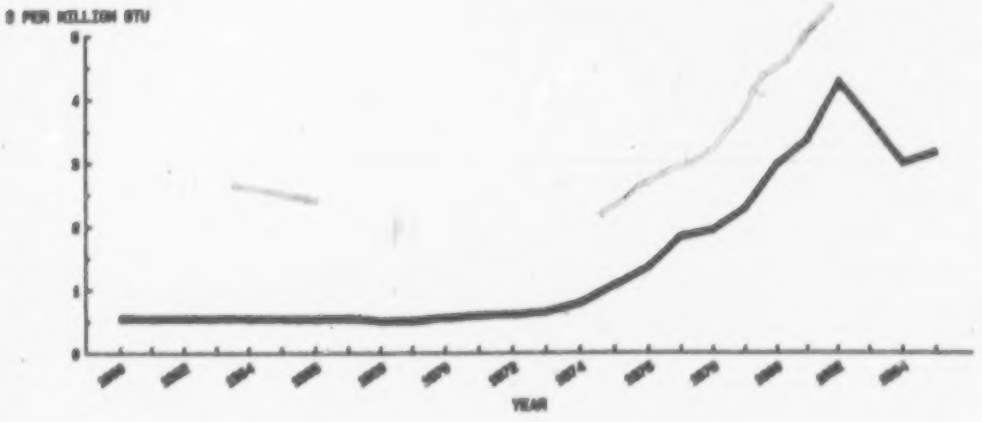


FIG. B-7. ANNUAL OHIO NATURAL GAS CONSUMPTION AND PRICES: INDUSTRIAL SECTOR (1960-1985)

CONSUMPTION VS. YEAR



PRICE VS. YEAR



COEFFICIENT OF TRANSFORMATION VS. PRICE

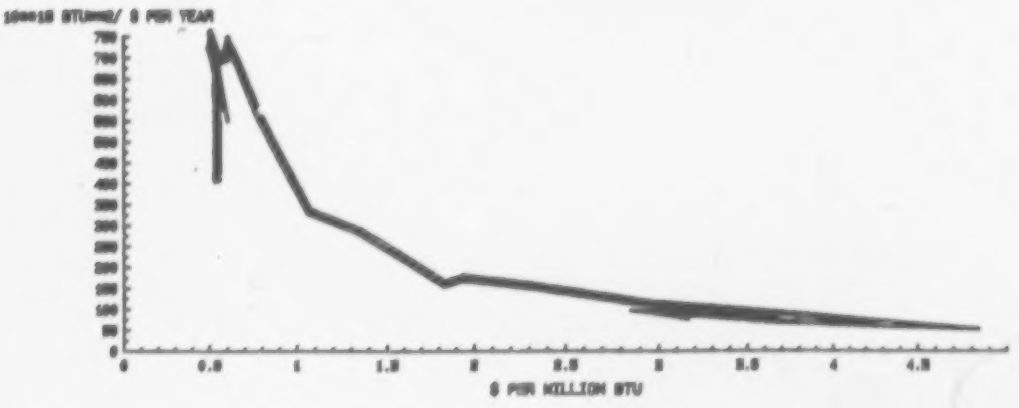
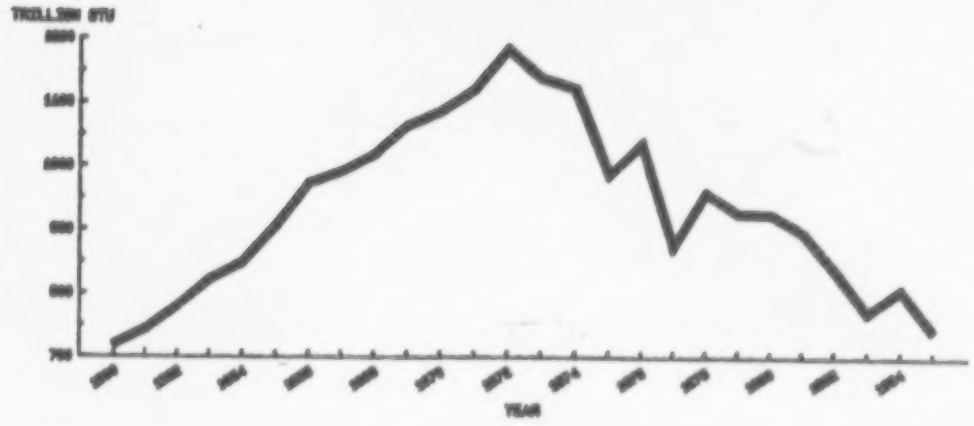
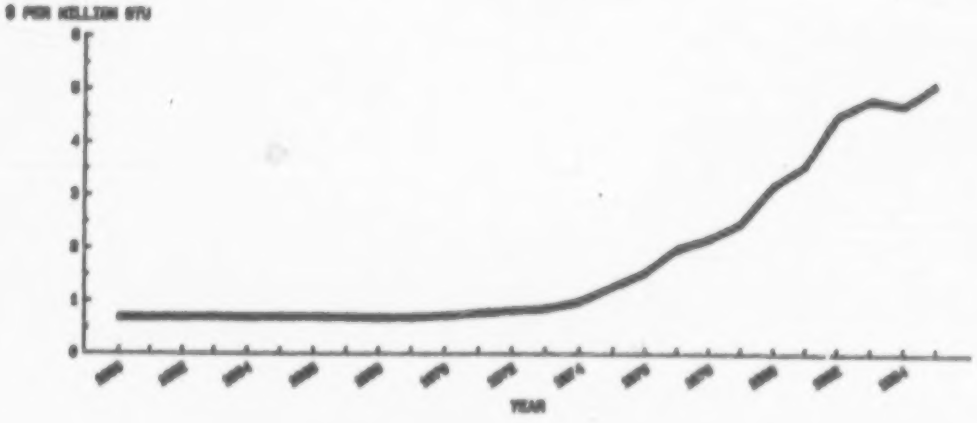


FIG. B-8. ANNUAL OHIO NATURAL GAS CONSUMPTION AND PRICES: TOTAL SECTOR (1960-1985)

CONSUMPTION VS. YEAR



PRICE VS. YEAR



COEFFICIENT OF TRANSFORMATION VS. PRICE

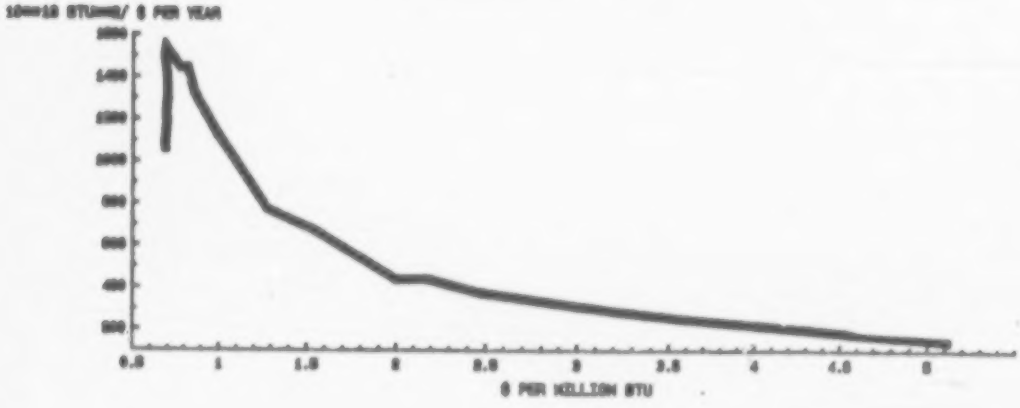


FIG. B-9. ANNUAL OHIO NATURAL GAS CONSUMPTION BY SECTOR (1960-1985)

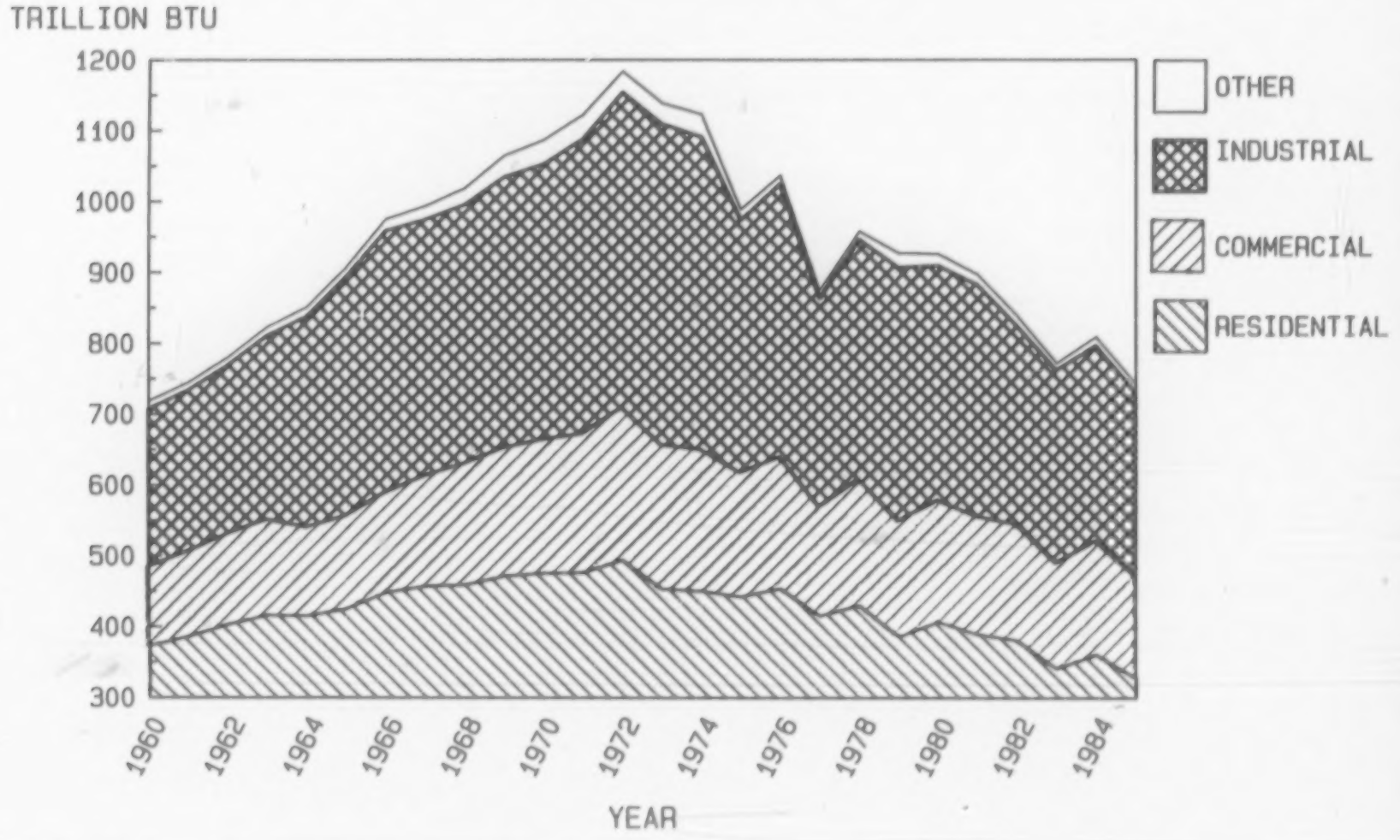


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TABLE 2. SOURCE OF COAL SUPPLY TO ELECTRIC UTILITIES
OHIO PORTION
1000 Short Tons

Month	1	2	3	4	6	7&8	9	Other	Total
1984									
January	0.0	196.9	36.0	2.144.9	310.4	1.272.5	46.1	0.0	4.006.8
February	0.0	211.7	42.4	2.337.8	384.1	1.302.1	40.2	0.0	4.318.3
March	0.0	258.9	62.5	2.499.4	387.1	1.170.7	59.1	0.0	4.437.7
April	0.0	206.8	44.3	2.248.9	466.3	1.064.3	16.4	0.0	4.047.0
May	0.0	194.5	19.2	2.451.0	374.9	1.273.0	0.0	0.0	4.312.6
June	0.0	176.2	28.1	2.173.4	382.0	1.217.1	15.2	0.0	3.992.0
July	0.0	185.7	33.1	2.360.1	170.2	1.229.6	19.8	0.0	3.998.5
August	0.0	190.9	27.5	2.523.7	493.2	1.537.4	0.0	0.0	4.772.7
September	0.0	132.5	8.3	2.225.7	423.3	1.471.8	10.6	0.0	4.272.2
October	0.0	117.0	3.6	1.733.2	317.8	880.2	22.0	0.0	3.073.8
November	0.0	128.4	12.6	1.730.7	270.2	943.4	6.2	0.0	3.091.5
December	0.0	144.8	23.6	1.558.1	283.8	1.065.8	19.5	0.0	3.095.6
Total	0.0	2.144.3	341.2	25.986.9	4.263.3	14.427.9	255.1	0.0	47.418.7
% of Total	0.0	4.5	0.7	54.8	9.0	30.4	0.5	0.0	100.0
1985									
January	0.0	166.8	29.1	1.962.9	363.6	1.027.5	24.5	0.0	3.574.4
February	0.0	215.3	53.4	1.756.1	467.0	807.4	20.8	0.0	3.320.0
March	0.0	199.4	51.2	1.921.9	492.7	1.301.9	32.8	0.0	3.999.9
April	0.0	180.5	51.2	1.631.7	426.7	973.0	31.9	0.0	3.295.0
May	0.0	196.8	49.3	1.790.2	305.0	1.051.8	17.4	0.0	3.410.5
June	0.0	250.3	31.4	2.196.9	269.7	1.181.0	0.0	0.0	3.929.3
July	0.0	201.2	65.6	1.529.7	97.3	857.0	28.8	0.0	2.779.6
August	0.0	258.5	78.9	2.175.7	354.6	1.148.3	0.0	0.0	4.016.0
September	0.0	242.4	42.9	2.087.6	331.3	1.161.1	16.6	0.0	3.881.9
October	0.0	306.5	45.5	2.254.4	353.2	1.219.8	40.2	0.0	4.219.6
November	0.0	177.6	38.3	1.933.3	342.3	1.148.1	0.0	0.0	3.639.6
December	0.0	160.8	25.2	2.098.8	316.7	1.113.0	25.5	0.0	3.740.0
Total	0.0	2.556.1	562.0	23.339.2	4.120.1	12.989.9	238.5	0.0	43.805.8
% of Total	0.0	5.8	1.3	53.3	9.4	29.7	0.5	0.0	100.0
1986									
January	0.0	139.0	23.2	2.355.5	306.6	1.110.7	34.1	0.0	3.969.1
February	0.0	260.1	32.5	2.025.3	325.9	1.194.3	51.3	0.0	3.889.4
March	0.0	273.6	30.6	2.076.8	327.9	1.411.8	28.0	0.0	4.148.7
April	0.0	304.0	44.6	2.088.6	169.0	1.246.9	63.4	0.0	3.916.5

District
1. Eastern Pennsylvania
2. Western Pennsylvania
3. Northern West Virginia
4. Ohio
6. Pandhandle (in West Virginia)
7. Southern No. 1 (in West Virginia and Virginia)
8. Southern No. 2 (in West Virginia and Virginia)
9. Western Kentucky

Other- Primarily from Wyoming and Utah

Source: Form FPC 423